U.S. Coast Goord Oceanographic Report

UNITED STATES COAST GUARD

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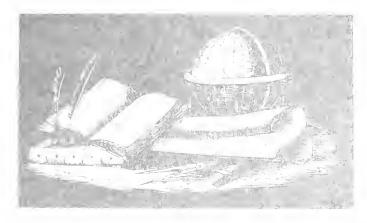
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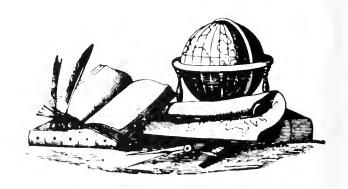
OCEANOGRAPHY OF THE WEDDELL SEA (IWSOE)

February-March 1969



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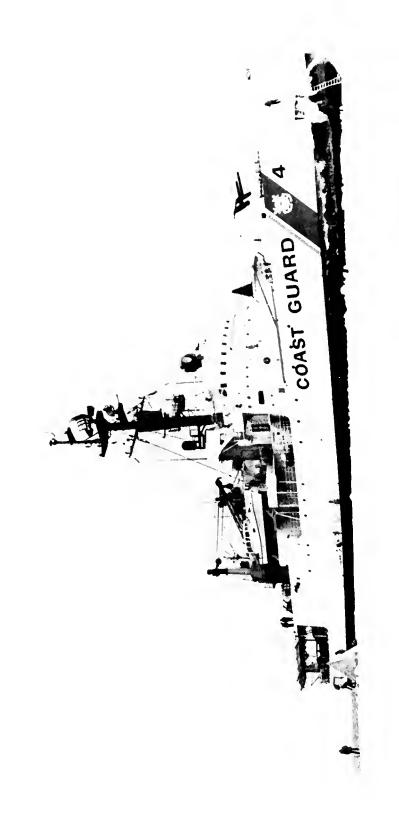
UNITED STATES COAST GUARD OCEANOGRAPHIC UNIT

REPORT No. 31 CG 373-31

OCEANOGRAPHY OF THE WEDDELL SEA IN 1969 (IWSOE)

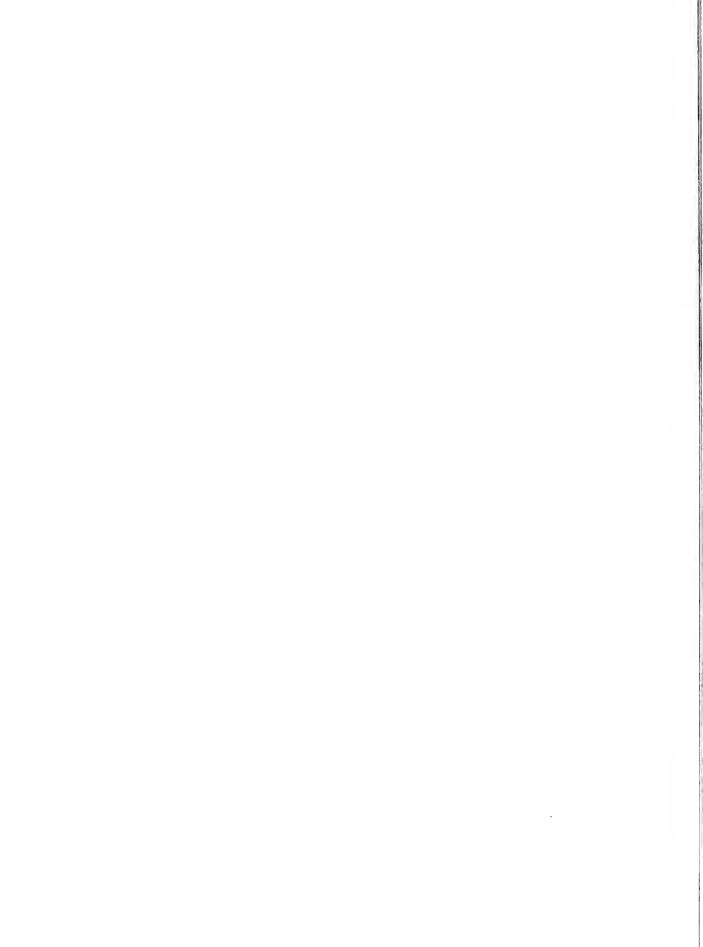
Gary L. Hufford and Lcdr. James M. Seabrooke





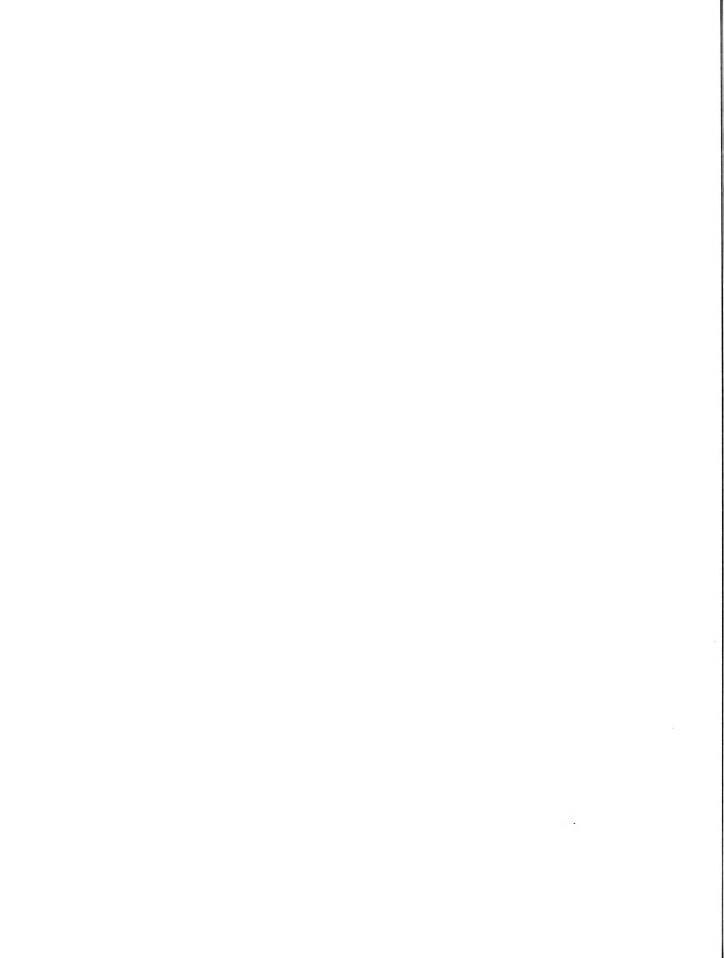
Abstract

This report discusses the physical oceanography of the Weddell Sea during the austral summer of 1969. The work was done on the icebreaker USCGC GLACIER (WAGB-4) as part of the second phase of the International Weddell Sea Oceanographic Expedition. Temperature, salinity, and oxygen measurements were obtained from a salinity-temperature-depth recorder and from Nansen bottles.



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OCEANOGRAPHY OF THE WEDDELL SEA (1969—IWSOE)

Introduction

Deacon (1963) indicated that the Weddell Sea is the largest source of Antarctic Bottom Water $(-0.4^{\circ} \text{ C., } 34.66\%)$. The generally accepted theory states that it is a mixture of warm deep water and water formed on the Antarctic continental shelf. The shelf water gets its particular properties by convection due to cooling and ice formation during the winter. Owing to the nonlinear dependency of density of seawater on temperature and salinity, the processes determining the formation of Antarctic Bottom Water are hampered or even prevented until a certain stage has been reached. The formation of Bottom Water may, therefore, appear as a sudden flow, with a perceptible current speed (Fofonoff, 1956).

In the summer of 1968, the icebreaker USCGC GLACIER (WAGB-4), modified for oceanographic research, became available for the International Weddell Sea Oceangraphic Expedition (IWSOE) under the coordination of the National Science Foundation. The major purpose of the expedition was to study the formation of Antarctic Bottom Water. From the data of IWSOE '68, Elder and Seabrooke (in press) proposed a theory for the formation of Antarctic Bottom Water in the summer. They found the shelf water below 200 meters in the southwest Weddell Sea to be sufficiently dense to flow down the slope and mix with the warm deep layer and form Antarctic Bottom Water. Analysis of the data indicated that the dense shelf water did not form at the air-sea interface nor was it transported in from other areas. Bathymetric data indicate it was not water formed in the winter, trapped on the shelf, and prevented from flowing off the shelf. They concluded that the dense water was formed on the continental shelf by contact with the underside of the Filchner and Ronne Ice shelves.

The IWSOE '69 is the second phase of the oceanographic program carried out in the Weddell Sea and is a direct continuation of IWSOE '68. The USCGC GLACIER, Captain E. C. McCory, USCG, commanding, was assigned for the cruise. In addition to the already existing oceanographic facilities, a new level luffing crane with a trawl winch was installed to give piston coring and heavier dredging capabilities to the ship.

IWSOE '69 Programs

A number of institutions took part in the expedition conducting the following programs:

University of Bergen: To evaluate the theories of the formation of Antarctic Bottom Water, Dr. Thor Kvinge of the University of Bergen installed four current meter buoy arrays on the continental shelf near 74° S., 40° W. during IWSOE '68 to measure currents and temperature throughout the winter. One of the primary objectives of IWSOE'69 was to recover the current meters.

The University of Connecticut: Dr. John S. Rankin of the University of Connecticut studied the population density and diversity of the deep sea benthos of the Weddell Sea using an anchor dredge and an epibenthic sled.

The University of Minnesota: A program to study the population dynamics of Antarctic seals was conducted by Dr. Albert W. Erickson of the Bell Museum of Natural History, University of Minnesota. The seal census was conducted from the air by helicopter as well as from the ship. Specimens were also captured and blood samples taken for studies of phylogenetic and population of relationships.

The University of California, Los Angeles: Sedimentation processes operating in the Weddell Sea were studied by Richard D. LeFever of the Department of Geology, University of California, Los Angeles. A modified Ewing pis-

ton corer 20 feet in length was utilized to obtain sedimentary material. The cores were returned to the United States where they will be exposed to X-rays to determine the types and extent of sedimentary structures which are not otherwise visible. In addition, chemical analyses will be made on the sediments to determine carbonate or sulfate concentrations and source rock composition.

The U.S. Coast Guard Oceanographic Unit: The program conducted by the U.S. Coast Guard Oceanographic Unit consisted of physical oceanographic measurements, determinations of dissolved oxygen, pH, and nutrients, and bottom photography. Personnel making up the Unit's field party included:

Gary L. HUFFORD LT James M. SEABROOKE.	Oceanographer
USCG	Oceanographer
MSTI Peter R. SAN JULE, USCG	Oceanographic
	Technician
SO2 Robert C. MURRELL,	
USCG	Oceanographic Technician
MST2 Kenneth THOENI, USCG	Oceanographic Technician
YN2 Dwight E. OLSON, USCG	Oceanographic Technician
MST3 Bruce B. EDWARDS,	
USCG	Oceanographic Technician

Initially, the cruise was to be conducted over an eighty day period, starting in early January and ending on April first. However, GLACIER was assigned to first break a channel to McMurdo Station and met unexpectedly heavy ice concentrations, which delayed the start of IWSOE '69 until mid-Februry. The cruise lasted till March 24, 1969.

Station Procedure

On February 13, GLACIER departed Punta Arenas, Chile. It was tentatively agreed to concentrate the investigations in the southeastern part of the Weddell Sea in the area of the current meter arrays planted during IWSOE '68 until their recovery. However, the ship ran into heavy ice that was impenetrable sixty miles from the current meter arrays. After several unsuccessful attempts were made, it was necessary to abandon recovery of the arrays during IWSOE '69. A series of stations were then taken in the area.

The initial procedure followed by the ship upon arriving at station depended largely on ice conditions. During IWSOE '69 heavy ice concentrations were encountered, and only twenty-seven oceanographic stations taken. It was usually possible to ease the ship's bow into an ice floe and by slowly turning the screws, hold the bow in the floe until it froze. at the same time clearing a small area on either side aft of brash ice. This provided a clear area in which to lower oceanographic equipment. This procedure was adopted instead of the one utilized during IWSOE '68, i.e., easing the starboard side against a floe. It was necessary to keep both sides clear for work due to the addition of a starboard luffing crane and winch.

Although station plans were constantly changing owing to a number of circumstances, a station usually consisted of a Nansen cast, bottom photography, an STD cast, piston coring and bottom trawls and dredges.

Satellite navigation contributed greatly to the success of station position determination. No navigational aids are available in the Weddell Sea, and celestial navigation is hampered by generally overcast skies. Since the accuracy of satellite navigation is not affected by either clouds or indistinct horizon, use of this method during the expedition yielded accurate positions.

Data Acquisition and Initial Analysis

A summary of data collected at each station is presented in table 1.

Temperature Data

Teflon-lined Nansen bottles were equipped with two protected reversing thermometers and, at alternate depths below 150 meters, with unprotected thermometers. Sampling depths were approximately 0, 10, 25, 50, 75, 100, 150, 200, 300, 400, 500, 600, 700, 800, 1000, 1250, 1500 meters and at 300 meter intervals below 1500 meters, except that several bottles were placed at 25 meter intervals near the bottom.

With the ship firmly held in the ice on most stations, a zero wire angle was generally obtained and an acoustic depth-telemetering pinger was placed on the wire to make it possible to obtain samples within a few meters of the bottom.

Table I. Summary of Data Collected at Each Station.

	Date	Tim (GM	re T)	Posit	ion	Depth of Water	Maximum Sampling			Bio		Photo.	snsu
Station	1969	On	Off	LAT S	LONG	(meters)	Depth- Nansen STD	Nansen	STD	Bottom Bio	Cores	Bottom Photo.	Seal Census
0001	24 Feb	0120	1824	74-31.6	30-18.9	513	510	X		\mathbf{X}	X		X
0002	25	0100	1454	75 - 31.5	30 - 08.3	378	375	\mathbf{X}	\mathbf{X}	X	\mathbf{X}		\mathbf{X}
0003	26	0230	1020	76 - 38.1	31 - 48.4	436	434	X			X		\mathbf{X}
0004	26	1730	2350	77 - 05.4	35 - 02.6	803	800	X		\mathbf{X}	X		\mathbf{X}
0005	27	0800	1730	77 - 19.7	36 - 41.3	1065	1063	\mathbf{X}	\mathbf{X}	\mathbf{X}	X		X
0006	28 Feb -01 Mar	2330	0900	76 - 50.2	40 - 55.4	513	510	\mathbf{X}		\mathbf{X}	X		\mathbf{X}
0007	01 Mar	1305	2050	77 - 16.0	42 - 38.3	500	495	\mathbf{X}		\mathbf{X}	X		
8000	02	0112	1054	77 - 38.5	42 - 27.8	570	565	\mathbf{X}		\mathbf{X}	\mathbf{X}		\mathbf{X}
0009	03-04	2110	0245	77 - 54.2	45 - 13.3	250	246	\mathbf{X}		\mathbf{X}	X		
0010	04	1215	2045	77 - 50.0	42 - 05.2	657	655	\mathbf{X}		\mathbf{X}	\mathbf{X}		X
0011	05	1700	2300	77 - 10.2	38 - 40.8	820	815	\mathbf{X}		X	X	X	\mathbf{X}
0012	06	1645	2330	77 - 18.9	37 - 42.3	988	985	\mathbf{X}		\mathbf{X}	X	\mathbf{X}	\mathbf{X}
0013	07	0600	0900	77 - 50.2	35 - 32.9	343	341	X	\mathbf{X}				
0014	07	1245	1610	77 - 22.0	34 - 29.2	362	360	\mathbf{X}	X				\mathbf{X}
0015	08	0300	0645	76 - 52.9	32 - 49.7	375	372	\mathbf{X}	\mathbf{X}		X		
0016	09	0230	0630	74 - 40.0	31-04.1	510	508	\mathbf{X}	X				
0017	09	1355	1638	74 - 19.0	32 - 28.6	591	590	\mathbf{X}	\mathbf{X}				\mathbf{X}
0018	10-11	0112	1418	74 - 15.0	32 - 30.0	640	240	Cu	rrent	Meter	Stat	ion	\mathbf{X}
0019	11-12	1715	0100	74 - 06.3	32 - 36.2	1447	1445	\mathbf{X}		X	\mathbf{X}	X	\mathbf{X}
0020	12	1008	1850	73 - 49.4	31 - 40.9	2317	2314	\mathbf{X}		\mathbf{X}	X	X	X
0021	13	0500	1616	73 – 52.0	31-17.6								
0022	14	0045	0958	73 - 29.0	30-24.1	3035	3035	X		\mathbf{X}	X		\mathbf{X}
0023	14-15	1448	0540	72 - 47.5	30 - 28.3	3658	3658	\mathbf{X}		\mathbf{X}	\mathbf{X}		
0024	15-16	2104	0950	71 - 36.1	30 - 36.1	3840	3800	X		\mathbf{X}	X		X
0025	16-17	2348	0506	70 - 38.8	33-32.3	4343	4340	\mathbf{X}				\mathbf{X}	
0026	17-18	2148	1204	68 - 36.8	32-03,6	4483	1090	\mathbf{X}		\mathbf{X}	\mathbf{X}		
0027	19-21	2344	1725	64 - 50.6	41-24.7	4572	4572	X		X	X		

Standard analysis procedures were used for correcting thermometers and determining thermometric and accepted depths. Use of the shipboard computer made accurate real time data analysis and quality control possible on board.

Salinity Determination

Salinity was determined using an inductive salinometer, and the onboard computer.

Oxygen and pH

Dissolved oxygen and pH were determined on all the water samples using the methods described by Strickland and Parsons (1965). From the oxygen data, percent saturation and apparent oxygen utilization were calculated giving a gross estimate of biological activity.

Nutrient Analysis

Water samples were analyzed at sea for in-

organic phosphate, nitrate, nitrite and silicate using the methods described by Strickland and Parsons (1965). The ultraviolet spectrophotometer was shock-mounted to counteract the continual vibration of the ship in breaking ice. This arrangement worked quite well.

Frozen samples for ammonia and total phosphous were returned to the U.S. Coast Guard Oceanographic Unit for later analysis. Due to problems with the distilled water and de-ionizer, the data will be given in a later report.

Salinity-Temperature-Depth System (STD)

A continuous trace of temperature and salinity versus depth was obtained at only 8 stations due to malfunctions of the salinity sensor. A Nansen bottle was attached to the STD wire just above the sensor unit for calibration of the STD data.

Bottom Photography

A Thorndike (1959) type bottom contact camera system was used for bottom photographs. The camera system was set up to take a photograph when the camera lens was three feet above the bottom and at a sixty-degree angle from the vertical. The ship's photographer developed the film, the compass-oriented photographs revealed many benthic organisms as well as current ripple marks.

Results of Preliminary Analysis

Due to the limited number of oceanographic stations (27) only one vertical section was selected for analysis (figure 2-7).

Analysis of the data using preformed nutrients (figures 5-6) as well as temperature and salinity (figures 2-3) indicate that three water masses were present in the southeast Weddell Sea (table 2). These were the water mass found on the continental shelf; a warm intrusion which was found from about 400 meters to 1600 meters depth off the shelf; and the bottom water mass which may or may not be Antarctic Bottom Water.

The temperature and salinity distribution of the shelf water and warm deep water showed that the bottom water present could not be produced by mixing of these two masses (figure 2-3). Deacon (1937) postulated that the formation of Antarctic Bottom Water takes place only in the southwestern Weddell Sea. Elder and Seabrooke (in press) found formation of Antarctic Bottom Water in the southwestern Weddell Sea, (west of 40° longitude) during IWSOE '68 by mixing of dense shelf water with warm deep water. Data from IWSOE '69 indicates that Antarctic Bottom Water formation does not take place in the southeastern Weddell Sea (east of 40° longitude) in the summer.

A question arises as to where the bottom water comes from in the cross section for IWSOE '69. Bottom photographs obtained from the USNS Eltanin and IWSOE '68 (Hollister and Elder, 1969) indicate a westerly flowing bottom current which follows the bathymetric contours in the southern Weddell Sea. Only a few photographs were obtained during IWSOE '69, but they also suggest a westerly flowing bottom current. Therefore, the bottom water present in the southeast Weddell Sea in 1969 may be part of the westerly flowing Antarctic coastal current which is evident only in the Weddell Sea area, where an extensive cyclonic motion occurs to the south of the Circumpolar current (Sverdrup, Johnson and Fleming, 1942). Further investigation is being conducted to determine the origin of the bottom water found in the southwestern Weddell Sea. Data collected during IWSOE '70 will hopefully add light to the problem.

Table II. Mean Characteristics of water masses present in the Weddell Sea in February 1969.

					d Nutrients -at/l)
Year	Water Mass	Temperature	Salinity	Phosphate	Nitrate
1969	Shelf Water	−1.60° C	<34.60%。	$1.65 \pm .19$	22.37 ± 2.46
	Warm Intrusion	0.40° C	34.67%。	$1.15 \pm .22$	14.57 ± 2.89
	Bottom Water	−0.26° C	34.66%。	$1.31 \pm .12$	17.38 ± 2.10

BIBLIOGRAPHY

- Dcacon, G. E. R. "The Hydrology of the Southern Ocean." Discovery Reports, Vol. 15, pp. 1-24, 1937.
- Elder, R. B. and J. M. Seabrooke. "The Formation of Antarctic Bottom Water. (A Report on the International Weddell Sea Oceanographic Expedition)." AAAS Proceedings of 1969 (in press).
- Fofonoff, N. P. "Some Properties of Sea-water Influencing the Formation of Antarctic Bottom Water." *Deep Sea Research*, Vol. 4, pp. 32-35, 1956.
- Hollister, C. D. and R. B. Elder, "Contour Currents in the Weddell Sea." *Deep Sea Research*, Vol. 16, pp. 99-101, 1969.
- Strickland, J. H. and J. R. Parsons. A Manual of Sea Water Analysis. Ottawa: Fisheries Research Board of Canada, 1965.
- Sverdrup, H. U., M. W. Johnson and R. Fleming. The Oceans. Englewood Cliffs, New Jersey: Prentice-Hall, 1942
- Thorndike, E. M. "Deep-sea Cameras of the Lamont Observatory." *Deep Sea Research*, Vol. 5, pp. 234-7, 1959.

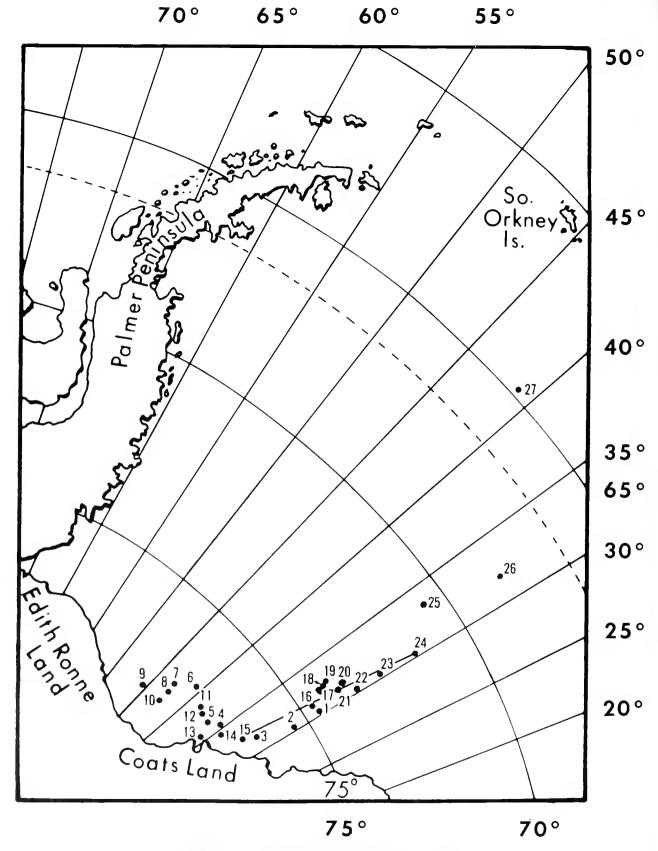


Figure 1. IWOSE '69 hydrographic station locations.

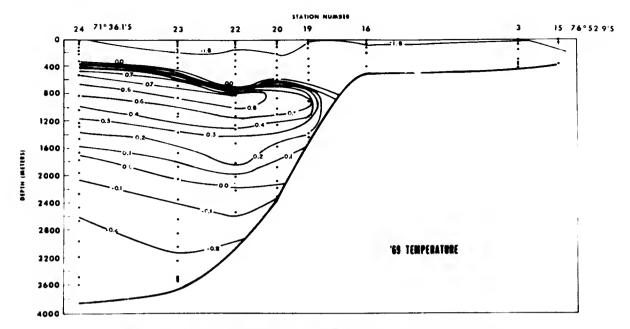


Figure 2. Vertical distribution of temperature (°C) during IWSOE '69.

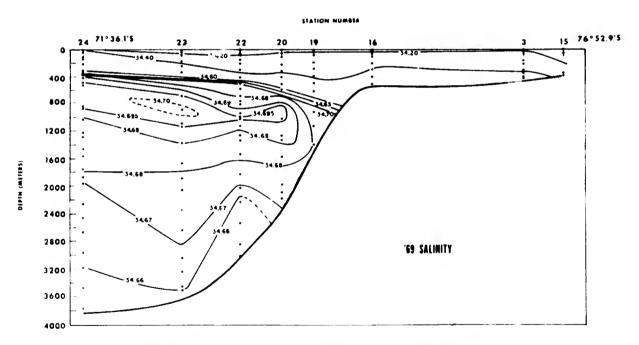


Figure 3. Vertical distribution of salinity (%) during IWSOE '69.



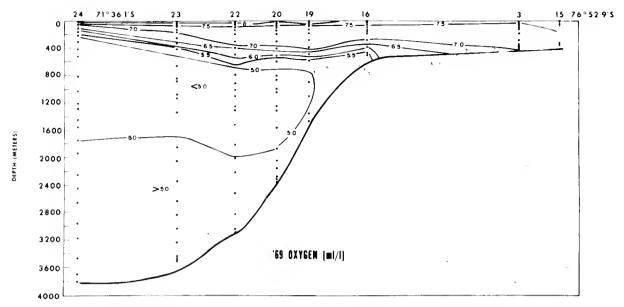


Figure 4. Vertical distribution of dissolved oxygen (ml/L) during TWSOE '69.

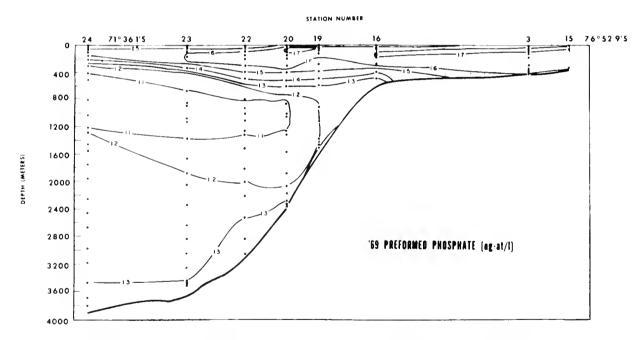


Figure 5. Vertical distribution of performed phosphate (µg-at/L) during IWSOE '69.

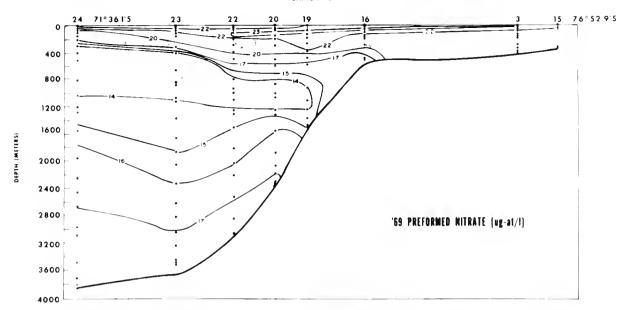


Figure 6. Vertical distribution of performed nitrate (μg-at/L) during IWSOE '69.

Table III. Table of Oceanographic Data (IWSOE '69).

EXPLANATION OF OCEANOGRAPHIC STATION DATA

A. Description of Entries, Units and Codes on NODC Station Listing

1. Surface Observations

Entry

Description of Field

NODC REF. ID. NO.

NODC reference identity number.

COUNTRY CODE CRUISE NUMBER Indicates nationality of the institute or agency conducting the survey or expedition.

A reference number assigned by NODC for storage-retrieval purposes, NODC Publica-

tion C-1, Reference Sources of Oceanographic Station Data, gives complete biblio-

graphic and other pertinent information for each cruise.

SHIP CODE

Alphabetic representation of ship's name (or ICES numeric ship code).

LATITUDE LONGITUDE Degrees, minutes, and tenths of minutes, N or S. Degrees, minutes, and tenths of minutes. E or W.

DRIFT INDICATOR

The letter D appears in this column if extensive drift occurred while on station.

MARSDEN SQUARE

10°

Marsden square number according to the Marsden square system.

1.

The one-degree square number according to the Marsden square system.

STATION TIME

(GMT)

Date and time given by the originator (GMT).

MONTH

Month (GMT). Day (GMT).

DAY

GMT to nearest tenth of an hour.

HR. 1-10 YEAR

Year.

ORIGINATOR's

CRUISE NUMBER

Alphabetic or alpha-numeric designator as assigned by the originator. If the year of the cruise forms part of the cruise numbering system, the year digits are found in

preceding field.

STATION NUMBER

Originator's station number or designator.

DEPTH OF BOTTOM

Corrected or uncorrected sounding depth in meters.

MAX. DEPTH OF

Depth of deepest sample in hundreds of meters to nearest hundred-meter interval.

SAMPLES

WAVE OBSERVATIONS

DIR.

Direction from which the dominant waves are coming, in tens of degrees, according to

WMO Code 0885.

HGT.

Height of dominant waves according to WMO Code 1555.

PER.

Period of dominant waves according to WMO Code 3155.

SEA AMT.

Sea amount (sea state) according to WMO Code 3700 (preceded by the letter A).

WEATHER CODE

If preceded by the letter X, weather according to WMO Code 4501. A numeric two-digit

entry indicates weather according to WMO Code 4677.

*INSTR./CLOUD

This field is used either for recording instrument code when electronically obtained data are being reported, or for reporting cloud type and cloud amount when conven-

tional Nansen cast data are being reported.

*INSTR.

A two character code representing instrument package of system.

TYPE AMT.

Cloud type according to WMO Code 0500. Cloud amount according to WMO Code 2700.

NODC STATION

NUMBER

Assigned by NODC for data storage and retrieval purposes. The NODC Reference Identity and Station numbers combined, uniquely define each station in the NODC

archives.

*DT/S"/D This indicator specifies that the reported data have been obtained electronically rather

than by Nansen-type casts. U (up) and D (down) are cast indicators for electronically obtained serial data and specify that the data were taken while hoisting or lowering

respectively.

WATER COLOR Water color according to Forel-Ule Code.

TRANS. (m) Water transparency in meters as determined by Secchi disc.

WIND

DIR. Direction from which wind is blowing in tens of degrees, according to WMO Code 0877.

SPEED OR FORCE If preceded by letter S, wind speed in knots; if preceded by letter F, wind force in

Beaufort code.

BAROMETER (mbs) Barometric pressure in millibars; tens, units, and tenths places only.

AIR TEMPERATURE °C.

DRY BUL Dry bulb air temperature in degrees centigrade, to tenths.

WET BULB Wet bulb air temperature in degrees centigrade, to tenths.

VIS CODE Visibility according to WMO Code 4300.

NUMBER OBS, LEVEL The number of observed levels associated with the station.

SPECIAL Entries in this space vary with individual cruises or stations. Information concerning

OBSERVATIONS entries in this field can be requested from the NODC.

2. A complete description of the codes can be found in NODC publication M-2 (Rev. August 1964), "Processing Physical and Chemical Data from Oceanographic Stations."

FERENCE	SHIP	LATITUD		ONGITUDE 5	SOUARE	CTATION TIN	Υ	YEAR	ORIGINATO	ON	DEPTH TO IOTTOM	DEPTH OF S'MPL	OBSE	WAVE RVATIONS	THER CODE	CLOUD CODES	7	5	NODC TATION SUMBER
18085		74316	S 0	30189W	555 40	02 24 1		969	001		515	05	+	1 8	X 4	2 6	1		0001
10000	V L		0 0		WA		IND	BARO	A ID TEAR P	E VIE	NO.	1	CIAL	' '	'			'	,
					COLO		SPEED OR FORCE	METE:	R DRY W	ET CODE	OBS. DEPTHS		ATIONS						
							503	928			11								
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	TIME HR 1/10	NO.	TYPE	DEPTH (m)	7 1	s -/	SIGMA	A-T	ANDMALY-X107	X 10 ³		OCITY	03 ш1/1	μg = 01/1	υg = α1/I	μg - σt/l	μg - σ1/l	υφ • α1/	pН
	1111																		
			STD	0000	-0113	3398	273		0007365	0000		426 426	805	124		012	222	05.7	783
	130)	OBS	0000	-0113 -0114	33976 3397	273 273		0007403	0007		428	805 808	124		012	222	057	100
	130	0	OBS	0010	-0114	33970	273		0001.05	000.		428	808	130		013	227	056	792
			STD	0020	-0121	3398	273		0007300	0015		426	811	122		-11	224		702
	130	0	OBS	0026 0030	-0125 -0128	33986 3405	273 2 74		0006736	0022		425	812 810	123		014	230	055	792
			STD	0050	-0147	3427	276		0004982	0033		423	799						
	130	0	085	0052	-0149	34289	276	1				423	798	161		018	280	064	790
	1.0		STD	0075	-0177	3436	276		0004195	0045		414	741 735	180		0.24	283	068	788
	130	U	OBS STD	0078 0100	-0179 -0185	34361 3438	276 277		0004006	0055		415	731	180		026	203	068	100
	130	0	OBS	0104	-0186	34384	277					415	741Q	191		012	294	070	784
			STD	0125	-0185	3438	277		0003967	0065		419	727						
	130	0	STD	0150 0156	-0184	3438 34382	277	0	0003963	0075	14	424	724 723	180		014	316	069	784
	10	~	STD	0200	-0181	3438	277	70	0003932	0095	14	433	721	0		J. 7		557	
	130	0	OBS	0208	-0181	34383	277	70		01-		435	720	181		007	304	070	788
			STD	0250 0300	-0180 -0179	3439 3440	277 277		0003867 0003787	0114		442	714 706						
	130	0	085	0311	-0179	34396	277		0003787	0133		453	704	176		027	321	072	788
			STD	0400	-0102	3446	277	74	0003548	0170		505	643						
	130	0	OBS	T0415 0500	-0088 0001	34479 3460	277 278		0003028	0203		514	6110 523	219		044	311	085	781
	130	0	STD 085	T0512	0015	34626	278		0003028	0203		580	505	000		016	346	101	780
10.	SHIP	LATITUE	E L	ONGITUDE 1/10	SOUARE	MO DAY H		YE AR	CRUISE STAT	ION	DEPTH TO BOTTON	DEPT	1	WAVE ERVATIONS HGT FER S	COD COD				STATION
	CODE	75314	1/10	. 10:	555 50	MO DAY H	R,1/10	1969	CRUISE STAT	ION BER	0 4 2 1	OF S'MPI	00 DIR.	HGT FER S	- con	E ITE AA	41		
10. NO.	CODE	•	1/10	1/10	555 50 W	MO DAY H 02 25 (8,1/10 56 1 VIND	1969 BARG	CRUISE STAT	TON VIS	TO	OF S'MPI	'S DIR	HGT FER S	COD	E ITPE AA	41		NUMBER
IO. NO.	CODE	•	1/10	1/10	555 50 W COLO COD	MO DAY H 02 25 C ATER V R TRANS: OIR.	R,1/10 0.56 1 VIND SPEED OR FORCE	BARI METI (mbs	CRUISE STAT NO. NUM DO 2 AIR TEMP. ORY W SULB SI	TC VIS	TO BOTTON 0 4 2 1 NO. ORS. DEPTHS	OF S'MPI	OO ECIAL	HGT FER S	COD	E ITPE AA	41		NUMBER
IO. NO.	GL	75314	1/10 + S 0	· '1/10 0	555 50 W COLO COD DT	MO DAY H	8,1/10 56 1 VIND	1969 BARG	CRUISE STAT NO. NUM 002 AIR TEMP. CR ORY W SULB SI 1 -078 -0	TON SEER VIS CODE JLB 82 8	10 80110A 0 4 2 1 NO. ORS. DEPTHS	M SIMPI	CONTRACTORS	ERVATIONS	X 4	0 3	41		0002
10. NO.	GL MESSENG TIME	75314	1/10	1/10	555 50 W COLO COD	MO DAY H 02 25 C ATER V R TRANS: OIR.	R,1/10 0.56 1 VIND SPEED OR FORCE	BARI METI (mbs	CRUISE STAT NO. NUM DO 2 AIR TEMP. ORY W SULB SI	TO VIS CODE JLB 82 8	0 4 2 1 NO. OZS. DEPTHS	OF S'MPI	OO ECIAL	HGT FER S	COD	P NO2-N	41	\$104-	0002
10. NO.	GL	75314	1/10 + S 0	· '1/10 0	555 50 W COLO COD DT	MO DAY H	R,1/10 D 56 1 VIND SPEED OR FORCE SOO	BARI METI (mbs	CRUISE NO. NUM 002	TON SEER VIS VIS CODE JLB 82 8	0 4 2 1 NO. OZS. DEPTHS	M SIMPI	CONTRACTORS	PO4-P	X4	P NO2-N	NO3-N	\$104-	0002
10. NO.	GL MESSENG TIME	75314	1/10 + S 0	1/10 P 30080W	SOUARE 10° 1. COD T COD	(GM1) MO DAY H 02 25 (ATER V R TRANS. OIR. SD 00 5 */	R,1/10 D56 1 VIND SPEED OR FORCE SOO SIGM	BAR(MET) (mb) 95	CRUISE NO. NUM 002	TON SEER VIS VIS CODE JLB 82 8	0421 NO. 025. DEPTHS	CONTRACTOR OF THE CONTRACTOR O	CONTRACTORS	PO4-P	X4	P NO2-N	NO3-N	\$104-	0002
10. NO.	GL MESSENG TIME	75314	TYPE STE	0000 0000	SOUARE 10° 1° 555 50 W COLCOD OT 1 ° C	(GM1) MO DAY H 02 25 (ATER V E TRANS OIR. S 00 S 4 3418 34183	R,1/10 D 56 1 VIND SPEED OR FORCE SOO SIGM 275 275	BARC METI (mbs	CRUISE NO. 002 AIR TEMP. R ORY W SULB SI 1 -078 -0 SPECIFIC VOLUME ANDMALT-EIO*	TON NEER VIS CODE ULB CODE UL	0421 NO. O25. DEPTHS 25	SF OBSEF OBSE OBSE OBSE OBSE OBSE OBSE OBSE OBSE	CONTRACTORS	PO4-P	X4	P NO2-N	NO3-N	\$104-	0002
10. NO.	MESSENGI TIME HR 1/10	75314	TYPE STC OBS STC	0000 0000	SOUARE 10° 1. COD T COD	(GM1) MO DAY H 02 25 (ATER V R TRANS. OIR. SD 00 5 */	R,1/10 D56 1 VIND SPEED OR FORCE SOO SIGM	95 BARR METI (mbs) 95 MA-T	CRUISE NO. STAT NUM OO 2 AIR TEMP. SULB SI 1 - 0.78 - 0 SPECIFIC VOLUME ANDMALT-E10?	TON SEER VIS CODE JLB SA D DYN. M X 103	0421 NO. 025. DEPTHS 25 SO VEL 144 144	CONTRACTOR OF THE CONTRACTOR O	CONTRACTORS	PO4-P	X4	P NO2-N	NO3-N	\$104-	0002
10. NO.	MESSENGI TIME HR 1/10	75314 "CAST NO. 1	1/10	OEPTH (m) OOO OOO OOO OOO OOO OOO OOO OOO OOO	SOUARE 100 17 C COD COD COD COD COD COD COD COD COD C	(GM1) 02 25 (CATER V R TEANS DIR. SD 00 5 */. 3418 34183 3419 34185 3423	8.1/10 0.56 1 VIND SPEED OR FORCE 5.00 SIGM 2.75 2.75 2.75 2.75 2.75	95 MA-T 54 54 54 57	CRUISE NO. 002 AIR TEMP. R ORY W SULB SI 1 -078 -0 SPECIFIC VOLUME ANDMALT-EIO*	TON NEER VIS CODE ULB CODE UL	TO BOTTON O 42 1 NO. O25. DEPTHS 25 VEL 144 144 144 144 144 144 144 144 144 14	OF ST	CONTRACTORS	PO4-P	X4	P NO2-N	NO3-N	\$104-	0002
10. NO.	MESSENGI TIME HR 1/10	75314 "CAST NO. 1	1/10	OEPTH (m) OOOO OOOO OOOO OOOO OOOO OOOO OOOO	SOUPRE 10' 1' 10' 1' 10' 1' 10' 1' 1	(GM1) MO DAY MO DA	R.1/10 D 56 1 VIND SPEED OR FORCE SOO SIGM 275 275 275 275 275	BARC METI (mb) 95 4A-T	CRUISE NO. 002 D. AIP TEMP. OR ORY W. SULE SI 1 -078 -0 SPECIFIC VOLUME ANDMALT—E10* 0005593	TON NBER VIS	0421 NO. ORS. DEFTHS 25 SO VEL 14 14 14 14	OUND DUND LOCITY 4398 4398 4400 4403 4403	CONTRACTORS	PO4-P	X4	P NO2-N	NO3-N	\$104-	0002
10. NO.	MESSENGI TIME HR 1/10	75314 "CAST NO. 1	1/10	OEPTH (m) OOOO OOOO OOOO OOOO OOOO OOOO OOOO	SOUARE 100 17 C COD COD COD COD COD COD COD COD COD C	(GM1) 02 25 (CATER V R TEANS DIR. SD 00 5 */. 3418 34183 3419 34185 3423	8.1/10 0.56 1 VIND SPEED OR FORCE 5.00 SIGM 2.75 2.75 2.75 2.75 2.75	95 8ART METI (mbs) 95 64 54 54 55 57 57	CRUISE NO. 002 D. AIP TEMP. OR ORY W. SULE SI 1 -078 -0 SPECIFIC VOLUME ANDMALT—E10* 0005593	TON NBER VIS	0421 NO. 025. DEFTHS 25 SO VEL 14 14 14 14	OUND DUND DUND LOCITY 4398 4490 4400 4403	CONTRACTORS	PO4-P	X4	P NO2-N	NO3-N	\$104-	0002
10. NO.	MESSENGI TIME HR 1/10	75314 "CAST NO. 1	1/10 S O O S S T O O S S T C O S S T C O S S S T C O S S S T C O S S S T C O S S S T C O S S S T C O S T C O S S T C O S S T C O S S T C O S S T C O S S T C O S S T C O S T C O S T C O S T C O S T C O T	OEPTH (m) OCOO OCOO OCOO OCOO OCOO OCOO OCOO O	-0180 -0176 -0176 -0177 -0177 -0177 -0175 -0175	GM1 M DAY H D2 Z5 V M T T T T T T T T T	8,1/10 56 1 SIGM SIGM 275 275 275 275 275 275 276 276	BARK METI (mb) 95 44-54 54-55 75-7 59-60	CRUISE NO. 1 NUM OD 2	V	10 BOTTON 10 BOT	SF 085EF 0400 4400 4406 4406 4406	CONTRACTORS	PO4-P	X4	P NO2-N	NO3-N	\$104-	0002
10. NO.	MESSENGI TIME HR 1/10	75314 "CAST NO. 1	1/10 4 S 0 1/20 STC OBS STC OBS STC OBS STC OBS	OEPTH (m) OOO0 OOO0 OOO0 OO20 OO20 OO20 OO20 OO	-0180 -0177 -0175 -0175 -0175 -0175 -0175 -0175	GGM1	8,1/10 566 1 SIGM SIGM 275 275 275 275 275 275 275 275	BARA-T BARA-T BARA-T 554 557 557 560 660 662	CRUISE NO. 1 NO. 2	TON NEER VIS CODE VI	0 4 2 1 NO. 0 6 PT MS. 25 SO VEL 14 14 14 14 14 14 14 14 14 14 14 14 14	SF 0055EF	CONTRACTORS	PO4-P	X4	P NO2-N	NO3-N	\$104-	0002
10. NO.	MESSENGI TIME HR 1/10	75314 "CAST NO. 1	1/10 S O O S S T O B S S T C O B S S T C O B S S T C O B S S T C C C C C C C C C	OEPTH (m) OCO O O O O O O O O O O O O O O O O O	-0180 -0176 -0176 -0177 -0177 -0177 -0175 -0175	GA11 H	8,1/10 56 1 SIGM SIGM 275 275 275 275 275 275 276 276	BARA-T BARA-T 54 554 557 559 660 662	CRUISE NO. 1 NUM OD 2	V	0 4 2 1 NO	SF 085EF 0400 4400 4406 4406 4406	CONTRACTORS	PO4-P	X4	P NO2-N	NO3-N	\$104-	0002
10. NO.	MESSENGI TIME HR 1/10	75314 "CAST NO. 1	1710 4 5 0 0 1710	OEPTH (m) OEPTH (m) OOOO OOOO OOOO OOOO OOOO OOOO OOOO	-0180 -0177 -0175 -0175 -0175 -0175 -0175 -0175 -0175 -0175 -0175 -0175 -0175 -0176 -0176 -0176	GAN1	8.1/10 8.1/10 9	95 BARA-1 95 MAA-1 95 MAA-1	CRUISE STAT NO. 0.02	VISER VIS (ET CODE) 1.00	0421 NO	SFF SOMSER STANDING S	CONTRACTORS	PO4-P	X4	P NO2-N	NO3-N	\$104-	0002
10. NO.	MESSENGI TIME HR 1/10	75314 "CAST NO. 1	1/10	OEPTH (m) OCEPTH	-0180 -0180 -0180 -0177 -0177 -0175 -0175 -0175 -0175 -0176 -0176 -0176 -0176 -0176 -0176 -0176 -0176 -0176 -0176	GA11 GA1 H	R.1/10 D.56 1 IVIND SEED OF FORCE SOO SIGM 275 275 275 275 275 275 275 275 275 275	95 95 95 95 95 95 95 95 95 95	CRUISE STATE NO. 1	TON NEER VIS	0421 NO	DUND DUND DUND DUND DUND H4400 H4400 H4404	CONTRACTORS	PO4-P	X4	P NO2-N	NO3-N	\$104-	0002
10. NO.	MESSENGI TIME HR 1/10	75314 "CAST NO. 1	1/10 4 5 0 0 1/10	OEPTH (m) OCO O O O O O O O O O O O O O O O O O	-0180 -0180 -0177 -0177 -0177 -0177 -0175 -0175 -0175 -0175 -0175	GM1 M GAT M Q Q Z 5 M C M M M M M M M M	R.1/10 STED STATE	95 MA-T 95 MA-T 95 MA-T 95 MA-T 95 MA-T 95 MA-T 95 MA-T 95 MA-T 95 MA-T 95 MA-T 95 MA-T	CRUISE NO. STAT NO.	TO NO. 10 NO. 1	0 4 2 1 NO	DUND DUND DUND DOUGHT 43988 43988 4400 4400 4403 4404 4406 4410 4414 4419 4419	CONTRACTORS	PO4-P	X4	P NO2-N	NO3-N	\$104-	0002
10. NO.	MESSENGI TIME HR 1/10	75314 "CAST NO. 1	1/10 1/10	OEPTH (m) OEPTH (m) OOO0 OOO0 OOO0 OOO0 OOO0 OOO0 OOO0 O	-0180 -0180 -0180 -0177 -0175	GA11	R.IVIO 556 1 SIGM SIGM SIGM 275 275 275 275 276 276 276 276	959 954 9554 9554 9554 9554 9554 9554 9	CRUISE STAT NO. 0.02	VISER VIS (ET CODE) 1.00	0 4 2 1 NO. 0 0 4 2 1 NO. 0 0 4 2 1 NO. 0 0 1 NO. 0 0 1 NO. 0 0 1 NO. 0 0 1 NO. 0 1 NO	000 STATE OF THE PROPERTY OF T	CONTRACTORS	PO4-P	X4	P NO2-N	NO3-N	\$104-	0002
10. NO.	MESSENGI TIME HR 1/10	75314 "CAST NO. 1	1/10 4 5 0 0 1/10 0 0 0 0 0 0 0 0 0	OEPTH (m) OEPTH (m) OOOO OOOO OOOO OOOO OOOO OOOO OOOO	-0180 -0180 -0177 -0175	GM1 M GAT M Q Q Z 5 M C M M M M M M M M	R.IVIO R.IVIO STEED TO THE TOTAL T	1969 BARKETS METS 54 554 554 554 554 554 554 55	CRUISE STAT NO. 1 PTEN NO. 2 PTEN	See	0 4 2 1 NO. 005. 005. 005. 005. 005. 005. 005. 144. 144. 144. 144. 144. 144. 144. 14	DUND COCITY 43988 4398 44400 4403 4404 4410 4411 4414 4419 4422 4424	CONTRACTORS	PO4-P	X4	P NO2-N	NO3-N	\$104-	0002
10. NO.	MESSENGI TIME HR 1/10	75314 "CAST NO. 1	1/10 4.5 0 1/10 5.10 0.85	OEPTH (m) OEPTH (m) OOOO OOOO OOOO OOOO OOOO OOOO OOOO	-0180 -0180 -0175	GM1 M DAT H Q2 25 L Q2 25 L Q3 L L S D D S C C S S D S	R.1/10 556 1 STEP 10 STEP 1	959 BARA-T 9554 S54 S54 S55 S55 S55 S55 S55 S55 S55	CRUISE NO. STAT NO.	TO NO. 10 NO. 1	NO. OPE NO.	000 STATE OF THE PROPERTY OF T	CONTRACTORS	PO4-P	X4	P NO2-N	NO3-N	\$104-	0002
10. NO.	MESSENGI TIME HR 1/10	75314 "CAST NO. 1	1/10 4 5 0 0 1/10 0 0 0 0 0 0 0 0 0	OEPTH (m) OEPTH (m) OOOO OOOO OOOO OOOO OOOO OOOO OOOO	-0180 -0180 -0180 -0177 -0175	GA11 GA1	R.1/10 Section Section	95 9 BARKETS MARTIN 554 554 554 555 557 559 660 665 6666 667	CRUISE STAT NO. 1 PTEN NO. 2 PTEN	See	25 SOC VEL 144 144 144 144 144 144 144 144 144 14	0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	CONTRACTORS	PO4-P	X4	P NO2-N	NO3-N	\$104-	0002
10. NO.	MESSENGI TIME HR 1/10	75314 "CAST NO. 1	1/10	OEPTH (m) OEPTH (m) OOOO OOOO OOOO OOOO OOOO OOOO OOOO	-0180 -0180 -0175 -0175 -0175 -0175 -0175 -0175 -0175 -0175 -0175 -0175 -0175 -0177 -0177 -0177	GM1 M DAT DAT M DAT DA	R.1/10 556 1 STEP 10 STEP 1	19699 BBARA-T 95 44554 554 554 555 557 557 557 560 665 665 665 666 667 667	CRUISE STATE NO. 1 PTEMP. 1 PTEMP. 2 PT	TO VIS (FIT CODE) 82 8 82 8 50 0000 0000 0006 0011 0016 0026 0038 0049 0060	0 4 2 1 NO. 00 80 110 NO. 00 95 NO.	OSSESSION STATE OF THE PROPERTY OF THE PROPERT	CONTRACTORS	PO4-P	X4	P NO2-N	NO3-N	\$104-	0002
10. NO.	MESSENGI TIME HR 1/10	75314 "CAST NO. 1	1/10 4 5 0 0 1/10 0 0 0 0 0 0 0 0 0	OEPTH (m) OEPTH (m) OOO0 OOO0 OOO0 OOO0 OOO0 OOO0 OOO0 O	-0180 -0180 -0180 -0177 -0175	GA11	R.1/10 Section Section	95 95 95 95 95 95 95 95 95 95 95 95 95 9	CRUISE STATE NO. 1 PTEMP. 1 PTEMP. 2 PT	TO VIS (FIT CODE) 82 8 82 8 50 0000 0000 0006 0011 0016 0026 0038 0049 0060	0 421 NO. 00 00 00 00 00 00 00 00 00 00 00 00 00	0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	CONTRACTORS	PO4-P	X4	P NO2-N	NO3-N	\$104-	0002
10. NO.	MESSENGI TIME HR 1/10	75314 "CAST NO. 1	1/10	0000 0000 0010 0010 0010 0010 0010 001	-0180 -0180 -0180 -0177 -0175 -0175 -0175 -0175 -0175 -0175 -0175 -0175 -0176 -0176 -0176 -0177 -0177 -0177 -0177 -0177 -0177 -0177 -0177 -0177 -0177 -0176	GM1 M DAT DAT M DAT DA	8.1/10 556 1	1969 BARA-1 54 555 556 666 667 700	CRUISE STATE NO. 1 PTEMP. 1 PTEMP. 2 PT	TO NOTE OF THE PROPERTY OF THE	0 421 NO. 00 NO.	DUND 00555 00555 00555 00	CONTRACTORS	PO4-P	X4	P NO2-N	NO3-N	\$104-	0002
10. NO.	MESSENGI TIME HR 1/10	75314 "CAST NO. 1	1/10	OEPTH (m) OEPTH (m) OOOO OOOO OOOO OOOO OOOO OOOO OOOO	-0180 -0180 -0180 -0180 -0177 -0177 -0175 -0175 -0175 -0175 -0175 -0175 -0175 -0177 -0177 -0177 -0177 -0177 -0177 -0177 -0177 -0177 -0177 -0177 -0177 -0177 -0177 -0176 -0176 -0176 -0176 -0176 -0176 -0176 -0176 -0176 -0176 -0176 -0176 -0176 -0176 -0176 -0177 -0177 -0177 -0177 -0177 -0177 -0177 -0177 -0177 -0176	GA11	SIGM SIGM SIGM SIGM SIGM SIGM SIGM SIGM	1969 BARA-I	CRUISE STATE NO. 1 PTEMP. 1 PTEMP. 2 PT	TO NOTE OF THE PROPERTY OF THE	0 421 NO. 00 421 NO. 0	DUND 0055	CONTRACTORS	PO4-P	X4	P NO2-N	NO3-N	\$104-	0002
10. NO.	MESSENGI TIME HR 1/10	75314 "CAST NO. 1	1/10	OEPTH (m) OEPTH (m) OOO0 OOO0 OOO0 OOO0 OOO0 OOO0 OOO0 O	-0180 -0180 -0180 -0178 -0177 -0177 -0175 -0175 -0175 -0175 -0175 -0175 -0176 -0176 -0176 -0176 -0177	GM1 M GM1 M GM1 M GM1 M GM1 M M M M M M M M M	8.1/10 STEED STEED	1969 95 888-1 95 95 888-1 95 95 888-1 95 95 888-1 95 888-	CRUISE STATE NO. 1 PTEMP. 1 PTEMP. 2 PT	TO NOTE OF THE PROPERTY OF THE	0 421 No. 0 421	DUND 00555 00555 00555 00	CONTRACTORS	PO4-P	X4	P NO2-N	NO3-N	\$104-	0002
IO. NO.	MESSENGI TIME HR 1/10	75314 "CAST NO. 1	1/10	OEPTH (m) OEPTH (m) OOOO OOOO OOOO OOOO OOOO OOOO OOOO	-0180 -0180 -0180 -0180 -0177 -0177 -0175 -0175 -0175 -0175 -0175 -0175 -0175 -0177 -0177 -0177 -0177 -0177 -0177 -0177 -0177 -0177 -0177 -0177 -0177 -0177 -0177 -0176 -0176 -0176 -0176 -0176 -0176 -0176 -0176 -0176 -0176 -0176 -0176 -0176 -0176 -0176 -0177 -0177 -0177 -0177 -0177 -0177 -0177 -0177 -0177 -0176	GA11 GA12 GA13 GA14	SIGM SIGM SIGM SIGM SIGM SIGM SIGM SIGM	1969 BARA-1 54 555 557 550 665 665 667 770 774	CRUISE STATE NO. 1 PTEMP. 1 PTEMP. 2 PT	TO NOTE OF THE PROPERTY OF THE	0 421 NO. 00 421 NO. 0	DUND 0055	CONTRACTORS	PO4-P	X4	P NO2-N	NO3-N	\$104-	0002
IO. NO.	MESSENGI TIME HR 1/10	75314 "CAST NO. 1	1/10	OEPTH (m) OEPTH (m) OOOO OOOO OOOO OOOO OOOO OOOO OOOO	-0180 -0180 -0180 -0178 -0177 -0177 -0175 -0175 -0175 -0175 -0175 -0175 -0176	GM1	8.1/10 STEED STEED	1969 BARA-T 54 554 555 555 660 665 666 677 771 774 773 774	CRUISE STATE NO. 1 PTEMP. 1 PTEMP. 2 PT	TO NOTE OF THE PROPERTY OF THE	0 421 No. 0 421	DUND 4398 4398 4400 4400 4406 4406 4419 4419 4419 4419 4422 4442 4447 4449 4474 4474	CONTRACTORS	PO4-P	X4	P NO2-N	NO3-N	\$104-	0002
IO. NO.	MESSENGI TIME HR 1/10	75314 "CAST NO. 1	1/10	0000 0000 0010 0010 0050 0050 0050 0125 0125	-0180 -0180 -0180 -0177 -0175 -0175 -0175 -0175 -0175 -0175 -0175 -0175 -0176 -0176 -0176 -0177 -0177 -0177 -0177 -0177 -0177 -0177 -0177 -0177 -0177 -0177 -0175 -0175 -0175 -0175 -0175 -0175 -0175 -0175 -0175 -0176 -0176 -0176 -0177	GM1 M GAT GAT M GAT GA	8.1/10 556 1 1 1 1 1 1 1 1 1	1969 BARA-1 54 655 655 655 655 655 655 655	CRUISE STATE NO. 1 PTEMP. 1 PTEMP. 2 PT	TO NOTE OF THE PROPERTY OF THE	0 421 No. 0 421	DUND 0055	CONTRACTORS	PO4-P	X4	P NO2-N	NO3-N	\$104-	0002
10. NO.	MESSENGI TIME HR 1/10	75314 "CAST NO. 1	1/10	OEPTH (m) OEPTH (m) OOOO OOOO OOOO OOOO OOOO OOOO OOOO	-0180 -0180 -0180 -0178 -0177 -0177 -0175 -0175 -0175 -0175 -0175 -0175 -0176	GM1	8.1/10 STEED STEED	1969 BARA-T 544 554 554 555 555 665 666 777 774 773 788 788 788	CRUISE STATE NO. 1 PTEMP. 1 PTEMP. 2 PT	TO NOTE OF THE PROPERTY OF THE	0 421 NO. 00 421 NO. 0	DUND 4398 4398 4400 4400 4406 4406 4419 4419 4419 4419 4422 4442 4447 4449 4474 4474	CONTRACTORS	PO4-P	X4	P NO2-N	NO3-N	\$104-	0002
10. NO.	MESSENGI TIME HR 1/10	75314 "CAST NO. 1	1/10	OEPTH (m) OEPTH (m) OOOO OOOO OOOO OOOO OOOO OOOO OOOO	-0180 -0180 -0180 -0177 -0175 -0175 -0175 -0175 -0175 -0175 -0175 -0176 -0176 -0177	GM1 M GAT GAT M GAT GA	8.1/10 556 1 1 1 1 1 1 1 1 1	1969 9 BARA-1 544 655 654 655 656 656 657 771 443 774 437 774 437 774 437 774 437 774 774	CRUISE STATE NO. 1 PTEMP. 1 PTEMP. 2 PT	TO NOTE OF THE PROPERTY OF THE	0 421 NO. 00 421 NO. 0	DUND 0055	CONTRACTORS	PO4-P	X4	P NO2-N	NO3-N	\$104-	0002
10. NO.	MESSENGI TIME HR 1/10	75314 "CAST NO. 1	1/10	OEPTH (m) OEPTH (m) OOOO OOOO OOOO OOOO OOOO OOOO OOOO	SOUNTE 10 10 10 10 10 10 10 1	GM1	8.1/10 STELLO STE	1969 BARA-1 544 554 6554 6555 656 666 677 774 774	CRUISE STATE NO. 1 PTEMP. 1 PTEMP. 2 PT	TO NOTE OF THE PROPERTY OF THE	0 421 NO. 00 421 NO. 0	DUND 100-15-50-50	CONTRACTORS	PO4-P	X4	P NO2-N	NO3-N	\$104-	0002
10. NO.	MESSENGI TIME HR 1/10	75314 "CAST NO. 1	1/10	OEPTH (m) OEPTH (m) OOO0 OOO0 OOO0 OOO0 OOO0 OOO0 OOO0 O	-0180 -0180 -0180 -0177 -0175 -0175 -0175 -0175 -0175 -0175 -0175 -0176 -0176 -0177	GM1	8.1/10 556 1 1 1 1 1 1 1 1 1	1969 9 95 88A-T 9554 6554 65557 7559 60 66 66 66 66 66 66 67 77 17 4 4 77 77 4 8 8 1 P 77 77 4 9 8 8 1 P 78 8 8 1 P 8 8 1 P 8 8 8 1 P 8 8 8 1 P 8 8 8 1 P 8 8 8 1 P 8 8 8 1 P 8 8 8 1 P 8 8 8 1 P 8 8 8 1 P 8 8 8 1 P 8 8 8 1 P 8 8 8 1 P 8 8 8 1 P 8 8 1 P 8 8 8 1 P 8 8 8 1 P 8 8 8 1 P 8 8 8 1 P 8 8 8 1 P 8 8 8 1 P 8 8 8 1 P 8 8 8 1 P 8 8 8 1 P 8 8 8 1 P 8 8 8 1 P 8 8 8 1 P 8 1 P 8 1	CRUISE STATE NO. 1 PTEMP. 1 PTEMP. 2 PT	VI	0 421 No. 0 421	DUND 0055	CONTRACTORS	PO4-P	X4	P NO2-N	NO3-N	\$104-	0002

REFE	RENC	SHIF		LATITU	DE 1/10	LONG	GITU OE * 1/10	DRIFT	10°	RE		(TM		YEAR	CRUISI NO.		ATOR'S TATION		DEPTH TO BDTTOA	DE	OF APL'S			VE TIONS	 WEA- THER CDDE	C	OUD DDES			NOOC TATION NUMBER
31	80	85 GL	1	7531	_	030	овом	П	555	_			0B5	1969		00	2		0421		03	00	0	х	Х4	C	3			0003
									[WAT	ER		WIND	BAF	o- L	AIR TE	MP. °C	VIS	NO.		SPECI	AL								
										COLOR	TRANS.	DIR.		1 77.		DRY BULB	WET BULB	COD	OBS.	085	SERVA	TIONS								
									+	DT		00	500			45	-147	1	20	\vdash										
		MESSE TIM HR 1	E d	CAST	G AI		DEPTH	lm 1	,	t	S	٧.	21G	MA-T	SPECIFI	C VOLU	M1 1	¥ ∆ D × 10 ³	A. SO	UND OCITI) ml/l		O4-P + 01/I	TA L-P		2-N - 01/I	NO3-N µg - 01/1	SI O4-5 pg - oi/	
			_					_			220		٦,			. 7	\prod			20.	_					Ì				
						LD ,	0000			196	339			34	000	742	6 (000		387										
		U	80		OB.		000		-0	196	339 341			34 54						3B1	•									
						1 D	001		-0		342			59	000	507	4	006		40	-									
		0	00		0B.		001		_	179	342			59	000	,,,,,	- (, , ,		40										
		•	00			70	002			180	343	_		64	000	460	5 (0011		403										
					OB		002			180	343			64	• • • •					40										
					ОВ	5	002	5	-0	180	343	03	27	63					14	404	4									
					\$	T D	003	0	-0	180	343	0	27	63	000)469	1 (016	5 14	404	4									
					οв	S	003			180	342			63						404										
						TD	005			175	343			63	000)467	6 (0025		41(
					ОВ		005			175	343			63						410										
						10	007			170	343			64	000	458	2 (0037		41										
					ОВ	D D	007			170 170	343			64	000)449	1 (0048		41										
					0B		010			170	343			65	000	,449	1 (1040		42										
						T 0	012			173	343			165	000	440	6 (0059		424										
					ов		012			173	343			765			•			4424										
						T D	015			169	343	_		166	000	433	4 (070		43										
					ОВ	S	015	0	-0	169	343	39	27	66					14	443	0									
					S	T D	020	0	-0	162	343	6	27	767	000	0416	7 (0091	1 14	44.	2									
					ΟВ	\$	020		-0	162	343	60		167					14	44.	2									
						TD	025			155	343			69	000	399	5 (112		+45										
					ОВ		025			155	343			69						45										
					08		026			148	344			770						+461										
					ов		027			102	344			772		2260				+48										
						TD	030			880	344			773	000	369	9 (113		449	-									
					OB OB		030			088 105	344			773 768P					14	+49	ر									
					OB		031			166P				770P																
					ОВ		033		_	073	344			772					14	+50	7									
					ОВ		033			098	344			773						4491										

REFERENCE	SHIP	LATITUDE	Lo		PRUFT	SQU			TION IGMT		YEA	R	CRUISE	5	ATOP'S	٧.	1	10	M AX. DEPTH OF	ОВ	W A SERV	.VE A TIONS	T	HER		DES		S	NOOC TATION TUMBER
DDE NO.		1/	10	1/10	=	10*	1"	MO	DAY	HR.1/10		_	NO.		A U W B E	R	RD	TIDM	S'MPL'	S DIR.	HGT	PER S	EA C	ODE	149	A M I		,	OWREK
318085	GL	753175	0	30089W	1	555	50	02	25	115	196	9		00	2		04	421	04	00	0	x	- ;	X 4	7	6			0004
							WAT	ER		MIND		A RO	A	IF TEA	MP °C	VIS		NO.	5.85	CIAL									
							COLOR	TRANS	OIR		1 "	mbal		DRY ULB	W E1	con	re c	DBS. EPTHS		ATIONS									
									00	500		951	-	_	-11	3 2	+	10											
[MESSENG			1		т '			1	1			1		-	ξ Δ D	+-				۲.								J
	TIME HR 1/1	ON TO	TYPE	DEPTH	(m 1	7	*C	5	•/	SIC	-AM	Т	ANOM			X 103	и.	VELO		02 ml/		O4-P	101A - 94		NO ₂ -		NO3-N pg - o1/I	\$1 O4-5) Pg - q1/1	рН
		1																											
			STO	000			180	34			757		000	525	5	0000)	143		764									
	10	9 (BS	000			180		227		757							143	98	764		196			016	6	273	065	752
			STD	001			180		23		758		000	521	0	0005	5	144		769									
	10	9 (BS	001			180		232		758							144		769		198			00	7	273	065	781
			STD	002			180		24		758		000	514	2	0010)	144		766									_
	10	9 (BS	002			180		251		759				_			144		764		195			001	В	280	066	789
			STO	003	_	_	180	34			61		000	_		0015		144		761									
		_	ST0	005		-0		34			65		000	450	7	0025)	144		748						_			
	10	9 (BS_	005			181		322		765							144		747		204			001	В	288	067	785
			STD	007		-	179		33		65		000	441	9	0036	5	144		764									
	10	9 (BS	007			179		336		766							144		765		204			009	9	296	062	785
			STD	010			181		34		766		000	432	2	0047	7	144		753									
	10	9 ()BS	010			182	-	342	-	767							144		751		212			00	3	292	069	788
			STD	012			181		35		67		000)05E	-	144		748									
		_	S T 0	015			180	34			67		000	421	В	0068	3	144		744					_				= - 0
	10	9 (BS	015			180		353		67				_			144		742	-	199			050	0	310	069	788
			STD	020		_	179		36		768		000	411	5	0089	7	144		728									
	10	9 (BS	T020			178		365		768			_				144		725		180			00	5	293	070	789
			STD	025			164		38		769		000			109		144	-	710									
			STD	030			138		42		772		000	374	2	129	9	144		680									
	10		85	1030			134		429	_	772							144		675		210			000		306	078	785
	10	9 (B\$	1039	0	-0	066	34	530) 5.	778							145	21	592		206			001	Б	321	089	783

									r	ORIGIN	47087		. 1 м	AX. T	WAVE	T	CLOUD		Т.	
EFERENCE	SHIP	LATITUDE	LONGITUD	10.71	SOU A	RE	STATION (GMT	1	YEAR	CRUISE S	TATION		TO DE	F O	HGT PER SE	WEA- THER CODE	CODES	ļ	51	ODC MOITATION MARRU
18085	GL	762815	03148	710	10° 555		02 26	055	1969	00		0	_	4 00	o x	X2	7 8	†		0005
	, ,			• •	[WAT	-	WIND	BARO- METER		$\overline{}$	VIS.	NO. 085.	SPECIAL						
					Į	COLOR	TRANS. DIR	FORCE	(mbs)	BULB	BULB		Cr IN3	ERVATIONS						
							00	500	928	051	-056	8	12		1		_			
	MESSENGR TIME	CAST C	YPE DEP	TH (m)	Т.	$\boldsymbol{\varepsilon}$	s 4.	SIGA	MA-T	SPECIFIC VOLU	m7 DYN	Δ. M.	SOUND VELOCITY	D2 ml/	PO 4-P yg = a1/I	101AL-P		NO3-N pg - at/l	51 O4-S1 yg - a1/1	ρН
	HR 1/10	9 NO. 1			+-			_	\longrightarrow		- - ^	103			+	-	_			-
		1 1	STD O	000	-0	172	3402	27	40	000687	9 00	000	1439		1	1			'	'
	056			000		172	34018 3403	3 27 27	-	000678	6 00	07	14399		179		017	268	062	750
	056			010 018		173 174	34038			000010	0 00	0,	1440		176		009	263	063	781
				020		175	3407	27		000646		13	1440							
	056			030 043		179 182	3420 34306	27 5 27		000544	6 00	19	1440		205		005	289	065	781
	050		STD 0	050	-0	182	3431	27	64	000458	1 00	29	1440							300
	056		-	068		183	34316 3432	5 27 27		000451	0 00	041	1440		201		010	269	066	782
	056			075 094		183 183	34318			000431	0 00	41	1441		204		001	291	066	782
	0.50		510 0	100	-0	183	3432	27	65	000447		52	1441							
	0.7			125		182	3432		65	000445	7 00	063	1441		Q 202		000	295	068	782
	056		_	144 150		182 182	34329		66	000436	6 00	74	1442		02		000	-,,	030	. 0 2
	056		35 0	195	-0	183	34344	4 27	67				1443		197		025	314	070	780
				200		183 181	3435		67 69	000418)96 116	1443							
	05			250 295	-	180	3437 34384		70	000400	,1 01	. 10	1445	- ,	201		800	280	071	780
			STD 0	300		181	3439		70	000382	0 01	136	1445		200		0.00	300	071	70.
	05			345 370		183 179	3440		72				1445		208 207		0 0 0	300 300	071 072	782 781
	05			395		187	34431		74				1446	4 726			000	270	071	781
	056			400		188 191	3445 3451		75 81	000327	9 01	171	1446 1446		211		000	303	076	782
FERENCE III ID.	SHIP	LATITUDE	LONGITU	DE JV10	4 / R!		-TATION (GM	71ME TI HR,1/10	YEAR	CRUISE	STATION NUMBER		TO DI	AX, PTH OF	WAVE SERVATIONS	COD	CODE		\$	NODC TATION NUMBER
1808	5 GL	770545	03502		555		02 26	205	1969	00	14	0	805	00 80	o x	X 7	5 7			0006
						COLOR CODE	TER TRANS. DI	FORC	E (mbs	R DRY BULB	WET BULB	CODE	NO. 085. DEPTHS 08	SPECIAL ERVATIONS						
	MESSENGI						1 0	0 300	71.	SPECIFIC VOL	1	Δο	SOUND		PO4-P	TOTAL-	NO2-N	1,0	51 04-51	T
	TIME HR 1/10	T NO.	YPE DE	PTH (mi	1	*c	5 */	. 51G	M A - T	ANOMALY-X	In7 DY	N. M	VELOCIT	D ₂ ml/	νο - στ/1	νg · ο1/1		NO3-N	yg - at/l	
	1	1 }	sto o	000		183	3426		60	000496	4 0	000	1439			1	'			
	19			000		183 183	3426		60	000493	15 00	005	1439 1439		180		009	280	067	731
				020		182	3427		61	000491		010	1440							
			510 0	030	-0	182	3427	27	61	000488	6 00	015	1440	3 770	100			202		7//
	19			031		182 183	3427. 3430		61 63	000469	66 00	024	1440		185		006	282	067	769
	19			056		183	3430		164				1440	7 740	193		002	294	068	779
	10			075		182	3433		766	000441	12 00	036	1441		206		004	292	069	782
	19			1082		182 182	3433 3435		766 767	000424	+4 00	046	1441				004	676	009	104
			STD 0	125	-0	182	3436	27	768	000415		057	1442	0 733						
	19			133		182	3436		769	000398	3 00	067	1442 1442				002	296	070	783
	19			150		182 183	3438 3439		770 771	000398	ال در	101	1442					299	070	78
			STD 0	200	-0	183	3440	27	771	000379		087	1443	3 728					-	
	19			250		185	3444		775	000345	55 0	105	1444				000	299	071	78
	19	> 0	BS 0	1284	-0	186	3446	0 21	777				1444				000	277	0 / 1	10.
	• •		STD 0	300	-0	187	3449	2.7	779	000303	37 0	121	1444	9 722						
	19	5 0	BS TO	300 384 400	-0	187 191 191	3449 3458 3459	0 27	779 786 787	000303			1444 1446 1446	2 717	192		000	295	069	782

2790 2790

2798

3463

34713

T0484

T0587

T0800

OBS

SID

OBS STD

OBS

STD OBS STD

OBS

-0192

-0193

-0197 -0197

-0198

-0198

-0195

-0195

718

0001391 0202

0000959 0214

SHIP	LATITU	JDE	LONGITUDE	DCTR	47.85 UO2			ON TIP		YEAR	OR CRUISE	TANIDI	OR'S TION	DEPTH TO	DEPTH		WAVE SERVATION	s	WEA-	CLOUE		S	NODC TATION
CODE		1/10	• 1/1		10*	1"	MOID	AY NE	.1/10		NO.		MBER	BOTTOM	S'MPL	S DIR	HGT PER	SEA	COOF	TYPE AA	AT	1	UMBER
5 GL	7719	75 0	36413	,	555	76	02 2	7 1	15 1	969		005		1085	11	00	o x		x 7	5 8			0007
-,					·	WA	TER	w	IND	BARO	All	R TEMP.	°C VIS.	NO.	SPI	ECIAL							
						COLOR	TRANS.	DIR.	DR FORCE	(mbs			WET COD	OBS. DEPTHS		VATIONS							
								06	505	926	-05	9 -0	61 5	16									
MESSENI TIME HR 1/1	GR CAST	C ARD TYPE	DEPTH	(m)	,	τ	s	٠/٠.	SIGM	A-T	SPECIFIC		₹ △ D DYN. M x 10 ³	SOL VELO	DCITY	O2 ml/l	PO4-P ug - 01/1		A L - P	NO2-N µg - ai/l	NO3-N µg - a1/l	\$1 O4-\$1 µg - 01/	рН
		STO	000		-0	181	342	я	 276	,	0004	853	0000	14	399	839				l			1
13	18	085	000			181	342		276		0004	0,5	0000		399	839	169			021	262	070	764
* -		STE	-		-	182	342		276	_	0004	838	0005		400	845	/			521		5.5	
13	8	085	001			182	342	-	276	_					401	8360	170			007	252	068	792
		STO	002	0	-0	182	342	8	276	2	0004	815	0010		402	852	_						
13	8 8	085	002		-0	182	342		276						402	854	163			006	248	064	795
		ST				182	343	-	276		0004		0014		403	814							
		STO		-		183	343	-	276	-	0004	195	0023		407	727							
13	88	085	005			183	343		276						407	725	210			007	287	069	788
, .		STO		-	-0	184	344	-	277	1	0003	869	0033	14	411	725	202				207	046	707
13	8	OBS ST	007	-	- ^	186	344		277	2	0003	407	0043	1.6	415	725 733	202			006	297	0 6 8	787
13	3.8	085	010		-	186	344		277		0003	07/	0043		415	734	209			005	293	069	784
* -		ST				187	344	_	277	_	0003	524	0052		419	727	203			507	2/3	00,	, , ,
		STO	-		-	189	344		277	-	0003	_	0060		422	723							
13	8	OBS	015	-	_	189	344	-	277	-					423	722	219			002	300	069	785
		ST	020	0	-0	195	345	0	278	0	0002	998	0076	14	428	723							
13	8	085	T020	8	-0	196	345	02	278	0				14	429	723	204			001	298	068	788
		ST			_	195	345	-	278		0002		0091		437	720							
		STO				193	345	_	278		0002	482	0104		447	716							
13	88	OBS	031			193	345	_	278						449	715	192			000	293	068	788
		STO				190	345		278		0002	203	0127		465	721							
13	8	085	T043		_	190	345		278		0003	001	01/0		467	722	198			000	295	068	788
13		810 085	D 050 тоб:		_	191 191	346 346	_	278	-	0001	771	0148		482 484	719 719	205			000	206	067	700
13		085	058	-	-	194	346		278						494 494	725	205 204			000	295 293	067 067	788 788
1 -		ST			-	196	346	-	279		0001	821	0167		496	725	204			001	2,5	007	, 00
		ST			_	206	346		279	-	0001		0184		509	724							
1.3	38	OBS	T075			208	346		279						517	720	207			003	299	069	784
		ST	080	0	-0	207	346	5	279	2	0001	444	0200	14	525	714							
1.3	88	OBS	T088	3	-0	204	346	70	279	4				14	541	706	199			000	294	071	786
		ST				202	346		279		0001	216	0413		545	706							
13	88	OBS	T098			194	347		279						564	706	202			001	298	070	788
		ST			_	193	347	-	279	,	0000	1940	0224		566	705							_
1.3	38	085	T108	33	-0	191	347	43	279	9				14	582	697	198			002	299	072	789

ERENCE			LE 1473	SDEN	TATION TIE	ME		ORIGIN	NATOR"	5	OEPTH	MAX.	1	WAVE	WEA-	CLOUG			100C
IO. CODE	LATITUDE	LONGITUDE	SOI SOI	JARE	(GMT)		YE AR	CRUISE	STATIC	N	TO BOTTOM	OEPTH OF	0.6	SERVA TIONS	THER	COOES		S1	MOITA
NO. COUL	1/10	1/10	10"	1.	MO DAY HE	R,1/10		NO.	NUMB	E.R	BUTTUM	S'MPL'	S DIR.	HGT PER SEA	COOL	TYPE AM	7	- 1	UMBER
8085 GL	77197S	036413W	555			15 1	969	00			1085	11	00	o x	X 7	0 3	1	1	0008
				WA		IND	BARC)• <u> </u>	MP. 10	VIS	NO.	SPE	CIAL						
				COLOR	1RANS. DIR.	OR FORCE	METE (mbs		BUL		OBS. DEPTHS	OSSERV	ATIONS						
				DT	SD 06	505	92	6 -059	-06	1 6	23								
MESSENGR	CAST C.			1	1-1-1		-	SPECIFIC VOL		₹ ∆ o	101	DNI		PO4~P	fotal=#	NO2-N	NO3-N	\$104-54	
TIME HR 1/10	U NO. I TY		(m)	r *c	5 */	SIGM	7 – A	ANOMALT-X	107	₹ △ 0 01N. M. x 10 ³		CITY	02 ml/	ug = e1/1	¥9 - 01/1	ug = at/1	μg - α1/l	μg - 01/I	pН
H k 1710		_ +							\rightarrow										
	S	TD 000	0 -0	173	3423	275	7	000524	8	0000	144	402		1 1		'	'	1	
115	5 OB	s 000	0 -0	173	34230	275	7				144	402							
	S	TD 001	0 -0	174	3424	275	8	000516	3	0005	144	403							
	08			174	34240	275						403							
		TD 002		174	3425	275		000510	3	0010	144								
00		-		174	34247	275						405							
	08			175	34262	276		000476		0015		405							
		TD 003		175	3429	276		000478	30	0015		407							
	08	S 003		175 177	34288 3437	276 276		000413	2 2	0024		407 410							
	08			177	34370	276		000413	, ,	0024		410							
		TD 007		178	3440	277		000388	36	0034		414							
	08			178	34400	277		00000	, .	0034		414							
		TD 010		180	3442	277		000372	28	0044		418							
	Q.B			180	34418	277				-	144	418							
	5	TD 012	5 -(182	3444	277	4	000353	39	0053	144	421							
	ОВ	5 012	5 -(182	34440	277	4					421							
		TD 015		183	3446	277		000336	8	0061		425							
	08			183	34460	277						425							
		TD 020		185	3450	277		000302	26	0077		433							
	08	-		185	34500 3453	277 278		000271	7.0	0092		433 441							
	08)186)186	34528	278		00027	19	0092		441							
		TD 030		188	3456	278		00025	3 7	0105		449							
	ОВ			188	34555	278		00027.	,	0.00		449							
		TD 040		188	3458	278		000228	3.8	0129		466							
	0,8			188	34580	278						466							
		TD 050		185	3460	278		00020	58	0151		485							
	08	S 050	0 -(185	34604	278	8				14	485							
	S	TD 060		185	3462	278		00019	18	0171		501							
	08			185	34615	278						501							
		TO 070		196	3463	279		00016	36	0189		513							
	0 B			196	34632	279						513							
	08			201	34640 3465	279 279		000149	. 0	0205		518 528							
	08			0200	34652	279		00014) 7	0200		528							
	08			193	34680	279						547							
		TD 090		196	3468	279		00011	77	0218		548							
	08			196	34684	279		300.1	. ,			548							
		TD 100		186	3472	279		000090	01	0228		570							
	OB			186	34720	279						570							
	0.8		0 -0	0180	34750	280						586							

REFERENCE					# A/ 2	SDEN	TATION TIE	MF		ORIGIN	NATOR'S	Т	DEPTH	MAX		WAVE	WEA-	CLOUD			NODC
CTAY ID.	CODE	LATITU	DE LC	NGITUDE E		JARE 1	MO DAY H	1	YEAR	CRUISE	STATION NUMBER		TO BOTTOM	OF S'MPL	1	ERVATIONS HGT PER SE	THER	TYPE AMT			STATION NUMBER
318085	GL	7650	2S 04	+0554W	556	60		25 I	969	00	6 MP. ℃		0515	05	00	0 x	x 1	7 1			0009
						COLOR		SPEED	METE	R DRY	WET	VIS.	NO. OBS. DEPTHS		ECIAL VATIONS						
						CODE	15	S16	94		-153	$\overline{}$	11								
	MESSENGR	CAST	G ARD	DEPTH (m)		r *c	s ·/.	SIGM	T-A	SPECIFIC VOL		€ ∆ D	sou		02 ml/l	PO4-P	TOTAL-P	NO2-N	NO3-N	\$104	
	TIME HR 1/10	Ť NO.	TYPE		-		ļ · · ·	-		ANOMALY-X	107	x 10 ³	VELC	CITY	-	yg • ot/l	μg • οi/l	µg = a1/1	yg - at/l	yg - a1/	//
		}	STD	0000	1 -0	177	3439	27	71	000397	r9 0	0000	144	402	828	1	J				
	031	l	OBS	0000		177	34394 3438	277 276		000408		0004		402 402	828 814	185		011	255	060	770
	031	ı	STD OBS	0013	-0	181	34373	276	59				14	402	813	191		8 00	264	061	780
	031	ı	STD 08S	0020		183	3439 34392	271		000398	33 0	8000		403 403	816 817	189		007	264	061	783
			STD	0030		183	3440	27		000393	31 0	0012		404 408	817	194		000	258	062	702
	031	<u>l</u>	OBS STD	0048 0050		181	34406 3441	27		000381	14 0	0020		408	800 792	174		8 00	236	062	782
	0 3	1	OBS STD	0074 0075	-(187	34469 3447	27	7 7	000332	26 (0029	14	411	729 729	221		005	268	064	778
			STD	0100		190	3452	278	81	000294		0037	14	414	731						
	03	1	08S ST0	0100 0125		190	34517 3454	278		000276	6 0	0044		414 419	731 725	212		003	294	063	778
			STD	0150	-(190	3456	278	84	000259		0050	14	423	719	217			207		770
	0 3 1	1	08S STD	T0151 0200		190	34560 3459	278		000231	15 0	0063		423 431	719 719	217		001	297	066	779
	031	1	oBs	T0204		193	34596	271	87				14	431	719 719	214		000	292	064	778
			STD	0250 0300		201									720						
	03	1	085 ST0	0309 0400		199									720 722	224		000	294	064	780
	03	1	085	T0412	-(198									722	230		000	296	064	779
	03	1	STD 085	0500 T0513)194)193									715 713	212		007	295	065	781
REFERENCE CTRY ID.	SHIP	LATITU	DE LO	ONGITUDE E	SO! SO!	SDEN	STATION TI	ME	YEAR	ORIGII CRUISE	NATOR'S STATION		OEPTH TO	M A)	H ORS	WAVE ERVATIONS	W E A -	CLOUD			NODC
CTRY ID.	CODE	•	1/10	'1/10	10.	JARE)	MO DAY H	R.1/10		CRUISE NO.	STATION NUMBER	R	BOTTOM	OFPT OF S'MPL	H OBS	HGT PER SE	THER CODE	TYPE AM			STATION
CTRY ID.	CODE	7716	1/10	ONGITUDE	ξ so	JARE)	MO DAY H	R.1/10	1969	CRUISE NO.	STATION NUMBER	R	10	OF S'MPL	H 085	ERVATIONS	THER	CODES			STATION
CTRY ID.	CODE	•	1/10	'1/10	10.	72	MO DAY H 03 01 1 TER W	R.1/10 .45 :		O- AIR THE	STATION NUMBER	R	80110M 0510	OFF S'MPL	H OBS	HGT PER SE	THER CODE	TYPE AM			STATION
CTRY ID.	CODE	•	1/10	'1/10	10.	72 WA	MO DAY H	R.1/10 .45	1 969 BARI	CRUISE NO. OC O- AIR TI ER DRY BULB	STATION NUMBER	VIS.	0510 NO.	OFF S'MPL	H 085	HGT PER SE	THER CODE	TYPE AM			STATION
CTRY ID.	GL	7716	1/10 OS 04	'1/10	556	72 WA	MO DAY H O3 O1 1 TER W	R.1/10 A 5 CINO SPEED OR FORCE S 3 0	1969 BARI METI (mbi	CRUISE NO. OCART BULB 7 -165 SPECIFIC VOL	STATION NUMBER	7 6	0510 NO. OBS. DEPTHS	OFFT OF S'MPL	H 085	PO4-P	THER CODE	5 7	NO3-N	\$1.04-	OO10
CTRY ID.	GL	7716	1/10 OS 04	42383W	556	72 WA COLOR CODE	16 MT1 MO DAY H 03 01 1 TER W TRANS. DIR.	R.1/10 A 5 CINO SPEED OR FORCE S 3 0	BARI METI (mbs	CRUISE NO. OC AIR THE CRY BULB 7 -165	STATION NUMBER	VIS.	0510 NO. OBS. DEPTHS	OEPT OF S'MPL	H OBS DIR. DOBS DOBS PECIAL EVATIONS	ERVATIONS HIGH PER SE	THER CODE	17/1E AM		+	OO10
CTRY ID.	GL MESSENGE	7716	1/10 OS 04	42383W	556	72 WA COLOR CODE	16 MT1 MO DAY H 03 01 1 TER W TRANS. DIR.	R.1/10 A 5 CINO SPEED OR FORCE S 3 0	BARI METI (mbs	CRUISE NO. OCART BULB 7 -165 SPECIFIC VOL	STATION NUMBER	7 6	0510 NO. OBS. DEPTHS	OFFT OF S'MPL	H OBS OBE ODE CECIAL EVATIONS O2 m1/8	PO4-P	THER CODE	5 7	NO3-N	\$1.04-	OO10
CTRY ID.	GL MESSENGE	7716	CARD TYPE STD O8S	DEPTH (m	556 556	72 WA COLOR CODE	16 MT1 MO DAY H 03 01 1 TER W TRANS. DIR.	R.1/10 45 VINO SPEED OR FORCE S30	BARI METI (mbs	CRUISE NO. OCART BULB 7 -165 SPECIFIC VOL	STATION NUMBER	7 6	0510 NO. OBS. DEPTHS	OFFT OF S'MPL	085 OIR. 5 00 PECIAL EVATIONS 02 ml/4	PO4-P	THER CODE	5 7	NO3-N	\$1.04-	OO 10
CTRY ID.	GL MESSENGA	7716	CARD TYPE	DEPTH (m 0000 0010 0015	556 556	72 WA COLOR CODE 1 'C	1GMT) MO DAY H 03 01 I TER W TEANS DIR. 13 5 .4.	R.1/10 45 : //INO SPEED OR FORCE S30 SIGA	93 AA-1	CRUISE NO. OCARTINE DRY BULB 7 - 165 SPECIFIC VOLANOMALY—3	STATION NUMBER	7 6	10 80110M 0510 0510 NO. 085. DEFTHS 11	OEPT OF S'MPL OF S'MPL OF SPROBSER	085 OIL 0 O2 mi//l 751 751 751	PO4-P	THER CODE	5 7	NO3=N ug - ol/l	21 O4 - of	OO 10
CTRY ID.	MESSENGE TIME HR 1/10	7716	CARD TYPE STD OBS STO OBS STO	DEPTH (m 0000 0015 0020	556 556	72 WA COLOR CODE 1 'C 0188 0188 0188 0188	1GM1) MO DAY H TER W TRANS DIR. 13 5 %.	R.1/10 45 : //INO SPEED OR FORCE S30 SIGA 270 277	93 MA-T	CRUISE NO. OC. ARTICLE OR THE CRUISE SPECIFIC VOL. ANOMALT—J	STATION NUMBER O 7 EMP C WET BULS -167	7 6	14-14	OEPT OF S'MPL OF S'MPL OF S'MPL OF SPER	085 00 PECIAL IVATIONS 751 751 751 751 750	PO4-P μg - c1/1	THER CODE	5 7	NO ₃ -N µg + o1/l	SI 04- ug - of	STATION NUMBER OO10
CTRY ID.	MESSENGE TIME HR 1/10	7716	CARD TYPE STD OBS STO OBS STO OBS	DEPTH (m 0000 0015 0020 0030	556 556	72 WA COLOR CODE 1 'C 0188 0188 0188 0188 0187 0187	1GM1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	R.1/10 45 : /INO SPEED OR FORCE S30 SIGA 270 270 270 270 270 270	1969 BARR METI (mb) 93 AA-T	CRUISE NO. 1 OC	STATION NUMBER O 7 EMP. 'C WET BULS -167	7 6	10 80110M 0510 0510 085. DEPTHS 11 SOL VELO	OFFT OF STANFILL OF STANFILL OF STANFILL OF SP OBSERR OF SP OBSERR OF STANFILL	085 018. 5 00 PECIAL IVATIONS 751 751 751 751 754 747	PO4-P μg - c1/1	THER CODE	5 7	NO ₃ -N µg + o1/l	SI 04- ug - of	761
CTRY ID.	MESSENGR TIME HR 1/10	7716	CARD TYPE STD OBS STO OBS STO OBS STO STD	DEPTH (m O000 0010 0015 0020 0030	- (- (- (- (- (- (- (- (- (- (72 WA COLOR CODE 0188 0188 0188 0188 0188	1GM11 MO DAY H O3 01 1 TER w TER DIR 13 5 - / 34630 34437 3444 3444	R.1/10 45 : //NO SPEED OR FORCE S30 SIGN 271 271 277	93 AA-T 90Q 74 75 75 77	CRUISE NO. OC. ARTICLE OR THE CRUISE SPECIFIC VOL. ANOMALT—J	STATION NUMBER O 7 EMP. 'C WET BULS -167	7 6	10 80110M 0510 0510 NO. OB. DEPTHS 11 SOL VELO	OEPT OF S'MPL OF S'MPL OF S'MPL OF SER	085 000 PECIAL IVATIONS 751 751 751 750 747	PO ₄ -P μg·οι/1 209 218	THER CODE	NO2-N NO2-N NO2-N NO2-N NO2-N NO2-N NO2-N NO2-N N NO2-N N N N N N N N N N N N N N N N N N N	NO3-N yg + o1/l 287 286	SI 04- µg - of 065	761 779
CTRY ID.	MESSENGE HR 1/10	7716 CAST NO.	CARD TYPE STD OBS STD	DEFTH (m) O000 O015 O020 O030 O050 O055 O055 O075	556 556)188 ()188 ()188 ()188 ()188 ()188 ()188 ()188 ()189 ()189 ()189 ()189	1GM1 M	R.1/10 45 : 1/1NO SPEED OR POACE 530 SIGN 27- 27 27 27 27 27 27 27 27 27 27	90 Q 74 75 77 77 79	CRUISE NO. 1 OC	STATION NUMBER) 7 EMP C WET SULB -167 -167	7 6	10 80110M 0510 0510 NO. 085. DEPTHS 11 14 14 14 14 14 14	0597 055 SP 08588 000 000 000 000 000 000 000 000 0	085 018. 5 00 00. RECIAL IVATIONS 751 751 751 750 747 747 737 735 731	FO4-P pg-e1/1 209 218 201 223	THER CODE	NO2-N 99 - 01/1 010 008 008	NO ₃ -N yq + o1/l 287 286 297	065 065 065	STATION NUMBER 0010
CTRY ID.	MESSENGR TIME HR 1/10 157 157 157	7716 CAST NO.	1/10 OS O4 OS O4 OS O4 OS O5 O5 O5 O5 O5 O5 O5	ODEPTH (m)	Solution Solution	D188	1GM1 M M M M M M M M M M M M M M M M M M	R.1/10 45 : INNO STEP OF TOWNER 530 SIGN 277 277 277 277 277 277 277 277 277 27	1969 8ARI METI (mb) 93 74 75 75 77 77 77 79 83	CRUISE NO. 1 OC	STATION NUMBER OF THE STATION	7 6	0510 MO. 0510 MO. 0510 MO. 058. DEFTHS 11 SOURCE 14 14 14 14 14 14 14 14 14 14 14 14 14	050 STMPIND OCITY 400 401 403 406 401 412 414	085 OIR 085 OIR 09 OIR	PO - P P	THER CODE	010 008 008 007	287 286 297 297	065 065 065	761 779 780
CTRY ID.	MESSENGE HR 1/10 157 157	7716 CAST NO.	CARD TYPE STD OBS	ODEPTH (m ODEPTH (m	5566 5566 5566	72 72 72 72 72 72 72 72 72 72 72 72 72 7	1GM1 MO DAY H 1 TER W 1 TERNS DIL 13 S - 1 34630 34437 3444 34444 34444 34444 34444 34444 34444 34494 3454 494 494 494 494 494 494 494 494 494	R.1/10 445 INNO STEED OR FORCE 700 CE 271 277 277 277 277 277 277 277 277 277	90 Q 74 75 77 77 77 79 83 83	CRUISE NO. 1 OC O. AIR TI ER CRY 1 SELECTIC VOI SELECTIC	STATION NUMBER STAT	7 6	14-14-14-14-14-14-14-14-14-14-14-14-14-1	OFF STMPL OF	085 018 00 00 PECIAL TOTAL TOT	FO4-P pg-e1/1 209 218 201 223	THER CODE	NO2-N 99 - 01/1 010 008 008	NO ₃ -N yq + o1/l 287 286 297	065 065 065	761 779 780
CTRY ID.	GL MESSENGA HAR 1/10 15 15 15 15 15	7716 CAST W NO.	CARD TYPE STD OBS STD	ODEPTH (m) ODEPTH	556 556	D188 D188 D188 D188 D188 D188 D188 D189 D189	34630 34437 3444 34444 34444 34444 34444 34444 34444 3445 3445 3455 3456	8,1/10 45 5/100 5/	90 Q 74 77 77 77 77 77 88 3 88 84 88	CRUSE NO	STATION NUMBER	7 6	TO T	OFF STMPL OF	751 751 751 751 751 751 751 752 735 737 737 737 737 737 737 737	PO = P PO	THER CODE	010 008 007 006	287 286 297 291 297 300	065 065 065	761 779 780 780
CTRY ID.	MESSENGR TIME HR 1/10 157 157 157	7716 CAST W NO.	STD OBS STD	OPPTH (m)	55 6 55 6 6 5 5 6 6 6 6 6 6 6 6 6 6 6 6	12 12 12 12 12 12 12 12	3463Q 34437 3444 3444 3447 3449 3454 3454 3454	270 277 277 277 277 277 277 277 277 277	90 Q 74 77 77 77 77 77 77 77 77 78 83 84 88 84 88 85	CRUISE NO	STATION NUMBER 10 10 10 10 10 10 10 10 10 10 10 10 10	7 6	14 14 14 14 14 14 14 14 14 14 14 14 14 1	OFF STMPIL OF ST	751 751 751 751 751 751 750 747 737 737 737 737 737 737	PO - P P	THER CODE	010 008 008 007	287 286 297 297	065 065 065	761 779 780 780
CTRY ID.	GL MESSENGA HAR 1/10 15 15 15 15 15	7716	CARD OF	0000 0000 0010 0015 0020 0030 0055 0075 0105 0150 0150 0150 0150 015	55 6 55 6 6 5 5 6 6 6 6 6 6 6 6 6 6 6 6	72 WAACCOLOR COOF TO	3463Q 34437 3444 34444 34444 34444 34444 3445 3445	8.1/10 SPEED STATE	1969 8ARIMETING 1990 Q 7447577777777777777777777777777777777	CRUISE NO. 1 OC. AIR TI CRY 1 FRE CRY 1 FULL TO THE CRY 1 OO 0 35! OO 0 27! OO 0 24!	STATION NUMBER 2010 NUMBER 201	7 6	14. 14. 14. 14. 14. 14. 14. 14. 14. 14.	OFF STAPP. ST	751 751 751 751 751 751 751 752 735 737 737 737 737 737 737 737 737 737	PO = P PO	THER CODE	010 008 007 006	287 286 297 291 297 300	065 065 065	761 779 780 780
CTRY ID.	GL	7716	1/10 OS O4 OS O4 OS O4 OS O5 O5 O5 O5 O5 O5 O5	OPPTH (m)	55 6 55 6 6 5 5 6 6 6 6 6 6 6 6 6 6 6 6	D188 D188 D188 D188 D188 D188 D189 D191 D191	3463Q 34437 3444 3444 3447 3449 3454 3456 3456 3456 3456	271 277 277 277 277 277 277 277 277 277	1969 BARINETIN 90 Q 74 75 77 77 77 77 77 77 77 77 77	CRUISE NO. 1 OC O. AIR TI CRE CRY 1 FRE CRY 1 FULL CRY 1 OO O O O O O O O O O O O O O O O O O	STATION NUMBER 70 PMP C WEIT 167 SULM 1	7 6	14-14-14-14-14-14-14-14-14-14-14-14-14-1	SP OBSER 400 401 403 406 407 412 414 424 432	085 018 00 00 00 00 00 00 00 00 00 00 00 00 00	PO(-P 10 10 10 10 10 10 10 1	THER CODE	010 008 007 000 000	NO3-N yg-ol/l 287 286 297 291 300	065 064 065 065 065	761 779 780 780
CTRY ID.	GL	7716	CARD OF	0000 0000 0010 0015 0020 0030 0055 0075 0105 0125 0150 0150 0150 0150 0150 015	55 6 55 6 6 5 5 6 6 6 6 6 6 6 6 6 6 6 6	72 WA COLOR CODE 17 T T T T T T T T T T T T T T T T T T	34630 34437 3444 34444 34444 34444 3445 34463 3455 3456 3456	R.1/10 45 1: 1/10 5/10 5/10 5/10 5/10 5/10 5/10 5/10	1969 8ARIMENTO 900 974 975 777 777 979 883 884 885 885 886 994 994	CRUISE NO. 1 OC 1	STATION NO MEETS 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7	7 6	14-14-14-14-14-14-14-14-14-14-14-14-14-1	OFF STMPIND OF STMPIND	751 751 751 751 751 751 751 751 751 751	PO(-P 10 10 10 10 10 10 10 1	THER CODE	010 008 007 000 000	NO3-N yg-ol/l 287 286 297 291 300	065 064 065 065 065	761 779 780 780 783
CTRY ID.	GL MESSENCE HR 1/10 15	7716	1/10 OS O4 OS O4 OS O4 OS O5 O5 O5 O5 O5 O5 O5	ODEPTH ON OCCUPANT OF THE PRINCIPLE OCCUPANT OCC	556 556	D188	3463Q 3463Q 34437 3444 3444 3444 3447 3449 3454 3456 3456 3456 3456 3457 34680 34680	8.1/10 45 1:INO 57610 57	90 Q 775 777 777 983 884 885 886 899 994 994 994 994 994 994 994 994 994	CRUISE NO. 1 OC. AIR TI OC. 1 FRE CRY 1 FULL TO THE CRY 1 OC. AIR TI OC. 1 OC.	STATION NUMBER	7 6	0510 NO. 05510 N	OFF STMPINO OF STMPINO	02 mi/d 751 751 751 751 751 751 751 751 751 75	PO4-P P P P P P P P P P P P P P P P P P P	THER CODE	NO2-N NO - 01/1 010 008 007 006 001 000	287 286 297 291 297 300 298	065 065 065 067	761 779 780 780 781
CTRY ID.	GL MESSING MESSING MR MR MR MR MR MR MR M	7716	1/10 OS O4	0000 0000 0015 0020 0050 0050 0050 0050	55 6 55 6 6 5 5 6 6 6 6 6 6 6 6 6 6 6 6	72 WA COLOR CODE WAS NOT SHOWN TO SHOW THE SHOWN THE SHO	3463Q 34437 3444 34444 34444 34447 34456 34564 34562 3457 3463 3467 34681 3470	8.1/10 45 1.1/10	1969 SARITION 93 SARITION 93 SARITION 93 SARITION 93 SARITION 94 SARITION 96 SARITIO	CRUISE NO. 1 OC 1	STATION NUMBER	7 6	05100 NO. OSS. OSS. OSS. OSS. OSS. OSS. OSS.	OFF STMPIND OF STMPIND	751 751 751 751 751 751 751 751 751 752 747 747 737 737 737 737 737 737 737 737	PO4-P 10 X 209 218 201 223 222 215 224 208 208	THER CODE	010 008 007 000 000	NO3-N yg + ol/l 287 286 297 291 297 300 298	065 064 065 065 065 065 066 067	761 779 780 780 781 783

FERENCE	SNIP	LATITU	01	LONGITU	OF 5		SOEN		ION TI	ME	YEAR	CRIII		STATIO		Q.	PTH GEP	TH OR	WAVE SERVATIONS	WEA-	CLOUG		,	ATION
10. NO,	COOE	*	1/10		1/10	10*	- 1	MOI		R.1/10		NO		NUMB			S'MP	P 1	HG# PLB SE	6000	TYPL AMI		N	UMBER
18085	GL	7738	55	04227	78 W	556	72	03	02 0	85	1969	Г	00	8		05	85 0	6 00	o x	X7	5 7			0011
						,	WA	,	-	VINO	BAR	5.		MP. °C			10.	PECIAL						
							COLOR	TRANS.	OIR	OR FORCE		ER .	ORY BULR	ME	000	for	BS. OBSE	RVA TIONS						
							-	\vdash	15	519	93		138	-14		-	2		1					
		JI						┰		┰			IFIC VOL		 5 ∧ n	+	SOUND	T	. PO4-P	TOTAL-P	NO2-N	NO3~N	5104-51	
		U NO.	C NR		EPTH (m)	1	℃	s	•/	SIG	MA~T		DW WF4-7	1197	₹ △ ¤ 0 v v . w	١.	VELOCITY	02 ml/	PO 4=P	101AL-P	μg - σl/l	μg - σ1/I	μg = ot/1	pН
	HR 1/10		_					+		+		-		-+		+		1	+	_				
			51	ro I	000	-0	189	1		1		1		,		ł		815	1	'	'		1	
	07	6	085		0000		189	35	6 2Q	28	700							815	199		800	289	065	753
			51		010		189				.							746	160		-1-	200		7.70
	07	6	083	-	010		189	34	430	27	74Q							746 746	169		010	288	064	779
			S'		0020		188	34	40	27	7 2	0.0	0386	0			14402							
	0.7	6	ОВ:		030		187	-	404	27		-					14402	746	203		010	283	063	782
			5	LD (050		189	34			72	0.0	0380) 4			14405	746						
	07	6	OB:		056		190		410		72			. 0			14405		208		009	286	065	785
	0.7	6	08:		0075		188	34	41		72 72	UC	10376	00			14411		209		009	288	064	785
	0 7	O			100		187	34			76	00	0338	36			14415		-0,		00.			
					125	-0	188	34	51	27	80	00	0298	86			14419							
	0.7	6	OB.	-	132		188		517		81						14421		216		003	291	065	784
	07	4	OB.		0150 0182	-	190	34	54 566	_	83 85	00	027	36			14423		207		000	294	065	788
	0 /	0			0200		192	34			85	00	0024	70			14431				000		00-	
					0250		193	34			87		0022				14439							
	07	6	08		0283		193		598		88						14444				000	293	064	789
	0.7	,			0300 0383		211	34	61 635		91	00	0020	89			14446		212		000	295	066	789
	0.7	0	08		0400		211	34			91	0.0	0017	54			14456				000	2,,,	0.00	
	07	6	08		0483		213		649		92						14469	722	213		000	299	068	784
					0500		214		65		92	0 (00160	05			14472					207	0	700
	07		08 08	-	0546 0574		215	_	659 683		93						14479				001 002	297 294	068 067	782 783
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C167 ID.	GL	7710	CAND CAND CAND CAND CAND CAND CAND CA	0000 0000 0010 0010 0010 0025 0030 0050 0051 0076 0100 0153 0200 T0204 0250 0307 0400 T0204 0250 0307 0400 T0204 0250 0307 0400 0511 0501 0511 0600 0614 0700 0714 0800	SOLAND S	3431 34312 3430 3446 3446 3459 3456 3466 3468 3468	TILL TO THE TOTAL	CRUISE STAIN NO. O. O	CONTRACTOR OF THE PROPERTY OF	No. OB45 No. Ob5 No. Ob5 No. Ob5 No. Ob5 No. Ob5	DEFINATION OR STREET OF ST	796 796 796 793 793 793 793 793 793 793 793 793 793	175 173 181 188 193 203 201 205 199 196 205 207 208	X 7	NO2-N NO NO NO NO NO NO NO	249 248 236 272 278 293 296 299 294 292 292 296 278	059 059 061 061 062 064 059 065 065 066 066	793 792 775 789 790 786 789 786 789 786 789 786	muy.
CTET ID.	GL	7710 Least 1 No. 1	CAND	0000 0000 0010 0010 0025 0030 0051 0076 0100 10153 0200 10153 0200 10250 0307 0410 0500 10511 0500 10511 0600 0614 0700	SOLAND S	3431 34312 3431 34313 34313 34313 3436 3436 3436 3	SIGMA - 1 SIGM	CRUISE STAIN NO. NUMBER 1 N	0000 0005 0005 0005 0005 0005 0014 0022 0033 0042 0057 00149 0140 0158	14-11-	DEFIN DISTRIVA 08 SPECIAL STATES 3997 3997 3997 3998 400 401 402 407 407 407 409 414 414 423 424 431 423 424 431 432 436 657 657 657 657 657 657 657 6	796 796 793 796 793 793 793 793 793 793 793 793 793 793	175 173 181 188 193 203 201 205 199 196 205	X 7	NO2=N NO2=	249 248 236 272 278 293 294 299 294 292 296	059 059 061 061 062 064 065 066 065	793 792 775 789 790 786 789 786 789 786 789 786	000

REFERENCE	SHIP	LATITUGE	LO	NGITUDE E	SOU	N3D2	TATION T	IME	YEAR	CRUISE	ORIGIN A	ATOR'S	=	OEPTH TO	MAX.	OBS	WAVE ERVATIONS	WEA- THER	CLOUD		S1	NODC
DE NO.	COOE	1/1	-	1/10		i	MO DAY	HR.1/10		NO.		UMBER		BOTTOM	S'MPL'	_	HGT PER SE		TYPE AM		И	UMBER
18085	GL	771895	0.3	17423W	555	\perp		205	1969		012		\sqcup	1024	10	00	0 X	X4	5 8	1		0015
						CDLOR	TRANS DIR	WIND SPEE	BARC METE	o-	DRY TEM	WET	VIS.	NO. OBS. DEPTHS		CIAL /ATIONS						
						CODE	18	513	_		UL# 57	10LF -159	8	14								
	MESSENGR		ARD					1	, 00		VOLUA				IND.		PO ₄ -P	TOTAL-P	NO2=N	NO3~N	51 O4=5i	
	HR 1/10		TYPE	DEPTH (m1		*C	s ·4.	sic	MA-T	ANOM	ALY-XIG	,,	ΔΩ x 10 ³	, AETO		02 ml/i	ya - 01/1	μg · α1/1	µg - at/1	μg + αl/l	yg - at/l	pН
			STD	0000	1	187	3440	7	771	000	390	2 0	000	1.6	398	780					ļ	
	194		85	0000		187	34401		771	000	2904	2 0	000		398	780	184		007	267	063	779
	194		STD BS	0010		186	3434 34344		767 767	000	4336	5 0	004		399 399	792 792	183		006	266	063	789
	1 74		STD	0020		185	3434	2	767	000	434	7 0	008	14	401	785	103		000	200	003	
	194	0	85 5TD	0020 0030		185	34342 3434		767 767	000	4343	3 0	013		401 400	785 765	186		007	268	063	790
	194	. 0	85	0031		191	34338		7 6 6	000	454 .	, ,	015		400	764	191		007	269	063	790
	10/		STD	0050		185	3434 34339		7 6 6 7 6 6	000	435	1 0	022		406 407	78 6 789	194		007	274	042	790
	194	• 0	85 510	T0056 0075		184	3442		773	000	370	2 0	032		409	755	174		007	214	062	790
			STD	0100		195	3450		780	000	306	0 0	040		412	727	210			205	044	7.04
	194		85 STD	0110 0125)196)196	34525 3453		782 782	000	281	2 0	047		413 416	720 724	210		0 0 2	295	066	786
			STD	0150	-	196	3455		784	000	264	3 0	054		420	729	2 - 2					
	194	. 0	BS STD	T0163 0200		1196 1194	34553 3457		784 785	000	246	4 0	067		422 430	731 729	202		001	293	06 6	77
			STD	0250	-0	192	3458	2 '	786		236		079	14	439	727	2-0			202		3.01
	194	• 0	85 \$10	0268 0300)191)191	34586 3459		787 787	000	226	0 0	091		443 448	726 723	209		001	293	066	78
	194	• 0	85	10374	-0	192	34599	2	788					14	460	720	204		001	293	065	788
	194		STD	0400 0478		1195 1199	3460 34612		788 789	000	211	1 0	112		463 474	722 724	205		001	291	064	78
	1) 4	•	STD	0500		196	3462		789	000	193	4 0	133		479	723	200		001	-/-	004	, 0
	194	• 0	BS STO	0582 0600	-	191	34625 3463		790 790	000	176	я о	151		496 497	718 718	212		000	292	065	786
			STD	0700		205	3463		790		166		168		509	716						
	194	• 0	BS	10780		210	34644		792 792	000	14.2		184		520 524	714 714	215		001	295	068	786
			STD	0800 0900		208	3465 3468		794		1143		197		542	711						
	194	• 0	85	10996		206	34700 3471	_	796 797	000	0007		207		559 560	709 710	213		001	299	070	789
	194	• 0	STD BS	1000 11016		206	34760		801	000	0087	• 0	207		563	716	209		000	301	072	790
FERENCE	SHIP	LATITUOE	10	NGITUOE IN		SDEN	STATION		YEAR		ORIGIN			DEPTH TO	M AX		WAVE ERVATIONS	WEA	CLOUG		,	NODC
DE NO.	COOE	1/	-	1/10	10.	1.	MO DAY	HR,1/10	1	NO,	,	TATION		BOTTOM	S'MPL		HGT PER SI	CODE	TYPE A.M	1		UMBER
18085	GL	775025	03	35329w	555	75 WA		085	1969		01		لب	0347	03	00	0 X	X1	7 2		1	0016
						COLDE	TRANS. DIO	SPEE	1,4.61	ER	DRY DRY	WET	VIS	NO. ORS. DEPTHS		ECIAL VATIONS						
						CDDE	18	FOR			108	-211	8	11								
	MESSENGR	ICA,T I	CARD		1		1	1		Τ ,	c volu		√ A. D.	_	מאט		PO4-P	TOTAL-P	NO2-N	NO3-N	SI O4-SI	T
			TYPE	DEPTH (m)		т *С	\$.4.	210	SMA-T		ALY-XI		YN, M X 10 ³	VELO	DCITY	02 ml/l	ug - 01/1	#8 - ot/I		µg • at/1	yg - a1/1	
							1															
	075		STD BS	0000		0187 0187	3457 34572		785 785	000	258	8 0	000		400 400	738 738	208		009	289	067	78(
	075		BS	0006	-(186	34420	2	773					14	399	736	205		006	288	066	79
	075		STD BS	0010 0014)185)184	3440 34386		771 770	000	390	8 0	003		400 401	745 751	209		007	287	066	79
	072		STD	0020	-(185	3438	2	770		405		007	14	401	749	207		001	23,	030	
	0.74		STD	0030		0186	3437		769	000	412	4 0	011		403	745	211		007	202	067	75
	075	, .	BS STD	0040		0187	34365 3437		768 769	000	414	0 0	020		404 406	742 737	211		007	283	067	10
	075	5 0	85	0066	-0	186	34367	2	769					14	408	735	214		005	290	067	79
	075	5 0	STD	0075 0092		186	3437 34365		769 768	000	412	1 0	030		410 413	739 744	214		007	290	067	75
	• •		STD	0100	-(185	3437	2	768		412		040	14	415	742				_ , 0		
	0.75	5 (STD	0125 T0143)184)184	3437 34365		768 768	000	410	7 0	051		419 422	738 736	214		006	291	067	79
			STD	0150	-(184	3436	2	768	000	410	0 0	061		423	736	- 17					
	079	5 (88	0194	-(184	34360) 2	768					14	431	736	209		006	288	066	795

14456

217

291

067

792

STD

STD

STD

OBS

OBS

T0300

T0322

T0343

-0184

-0184

-0185

-0185

-0185

-0183

-0184

075 075

EFERENCE IN ID.	SHIP	LATITU	IDE 1/10	LONGITUDE		SDEN PARE		TION (GMT	TIME) HR,1/10	YEAR	CRU		STATI MUN	ON		DEPTH TO BOTTOM	DE	AAX. EPTH OF APL*S		OBSE		/E TION PER	TH	EA- HER DDE	CO	DUD	1		NOD (STATIC NUMB	NC
318085	3L	7750		035329W	555	_			085	1969		01	3			347		03	1	00	0	х)	(1	0	3			00	17
1000	1 25 1	1150	23	0333274	1	WA			WIND		-	AIR TE		c T	—'[NO.	Н	_			• 1		1 -		•	, -	'	1	•	1
						COLOR	TRAN	S. DIR	SPEE	BAR MET		DRY	w		VIS	085.	085	SPEC	CIAL ATIO	NS										
						CODE	imi	1011	FORC		21	BULB	80	-		DEPTHS				_										
						DT	SD	18	\$10	79	1	-208	-2	11	8	14														
	MESSENGR TIME HR 1/10	CAST NO.	C AR TYP		11	'c		s •/	SIC	MA-T		IFIC VOL		₹ Z OYN X	1. M. 10 ³	SOL	DOIT		02	ml/l		04-F - 01/	OTA:		NO:		NO3-N vg - at/l	\$1 O4 = yg - at		рН
		[• •				• •		1,	20	ا ر												
			S1			188		27		761	00	00489	, 9	00	00	14														
	065	•	085 S1			188		271 28		761 762	0.0	00482	2 2	00	n 5	14														
			089			188		280		762	0	00402		00	0,	14	_													
			S1			187		29		762	0.0	00475	0	00	10	14														
	000)	089			187		289		762	•		-	_		14														
		,	089			187		289		762						14	40	0												
			S1	rD 0030	-0	187	34	29	2	762	0.0	00474	43	00	14	14														
			089			1187		289		762						14														
			S1			187		129		762	00	00472	23	00	24	14														
			085			187		290		762						14														
			Si			187		29		762	0.0	00470	7 (00	36	14														
			085			187		290		762						14														
			SI			187		+29		762 762	U	00466	3 2	UU	47	14														
			0B3			187		•291 •29		763	0.	00466	١.	00	59	14														
			089			187		292		763	00	JU 400	30	00	,,	14														
			Si			187		129		763	0.0	0046	36	00	71	14														
			089			187		293		763	•		-	•		14														
			Si			186		129		763	06	00460	7 0	00	94	14														
			085			186		1293		763						14	43	0												
			S1	0250	-(186	34	30	2.	763	00	00456	50	01	17	14	43	8												
			083	0250	-(186	34	295		763						14														
			Si			186		+30		763	01	00449	91	01	39			-												
			085			186		÷300		763						14														
			089	5 0320	-(186	34	+309	3 2	764						14	45	0												

TRY ID.	SHIP	LATITUI	DE 1/10	LONGITUDE '1/10	NO.	SDEN PARE	(GMT	TIME 1 HR.1/10	YEAR	CRU		STAT NUM	ON	1	TO TO OTTOM	MAX. DEPTH OF S'MPL"		WAVE SERVAT	ONS	WEA THER COD	CO	DES		\$1	NODC FATION UMBER
31808	5 GL	7722	os	034292W	555	74	03 (7	140	1969		0	4		0	370	04	00	o x		X7	7	8			0018
						WA	TER		WIND	BAS	0-	AIR T	EMP.	C V		NO.	< pc	CIAL								
						COLOR	TRANS.	DIR	SPEED OR FORC	MET	ER	DAY BULB		ET CO	nd	OBS. EPTHS		ATIONS								
								21	504	75	64	-115	-1	16 7	1	10										
	MESSENI TIME HR 1/1	CAST NO.	C ARC TYPE		n) 1	°C	s	٠/	SIG	MA-T		IFIC VOL		₹ ∆ (DYN. x 10	м.	VELO		Q 2 ml/l	PO.	-P	TOTAL-I			NO3-N	SI O4-\$1 µg = 01/1	ρН
			ST	D 0000		183	34	2.1	27	56	1	0053	63	000	0	143	807	772					İ			
	14	0	085			183	34			56		,,,,	0)	000		143		772	19	a .		01	2	267	061	788
			ST			183	34.	2 1		56	00	0053	57	000	5	143		774		•		•			•	
	14	0	oBs	0010) -C	183	34.	212		56	-					143		774	18	39		01	1	270	062	791
			ST	0 0020) –C	185	34.	25	27	59	0.0	0050	55	001	1	144	•00	759				•			•	
			ST	D 0030	-0	186	34.	2.8	27	62	00	0048	14	001	6	144	01	749								
	14	0	085	0036	-0	187	34	286	27	62						144	•02	746	21	13		01	l	284	065	758
			ST	D 0050) -0	186	34	28	27	62	0.0	0047	70	002	5	144	04	753				-				
	14	0	085	0061	L -0	1186	34.	283	3 27	62						144	+06	754	20)6		01	1	284	067	789
			ST	D 0075	-0	186	34.	29	27	62	0.0	00470	39	003	7	144	09	744								
	14	0	085	0087	7 -0	186	34.	299	27	63						144	11	738	20	16		01	1	288	066	790
			ST	D 0100	-0	186	34.	30	27	63	00	0046	10	004	9	144	13	739								
			ST	D 0125	-0	185	34	31	27	64	0.0	0045	57	006	0	144	18	741								
	14	0	OBS	T0136	-0	185	34	308	27	64						144	20	742	21	1		010)	287	066	790
			S1	D 0150) - C	185	34	31	27	64	0.0	0045	26	007	1	144	22	740								
	14	0	085			1186	34.	307	27	64						144	28	736	20	7		008	3	288	066	789
			ST			186	34			64	0 (00450	00	009		144	+30	736								
			ST	D 0250) -C	187	34	31	27	64	00	0044	52	011	6	144	38	735								
	14	0	OBS	0291	-0	1187	34	310	27	64						144	45	732	20	9		009	9	291	066	790
			ST			185	34	31	27	64	0.0	00431	37	013	8	144	+47	731								
	14		085			1183	34	332	2.7	66						144	•55	725	20	7		01	2	296	067	790
	14	0	085	0366	- C	187	34	372	2. 27	69						144	-58	722	20)6		00!	5	294	068	790

								-							_				
REFERENCE	SHIP	LATITU	DE 10+	GITUOE S	A/ RSOEH SQUARE	STATION THE	AE YEAR	CRUISE	RIGINATO		DEFTH	DEPTH	OBS	W A VE	WEA-	CLOUD			NOOC STATION
CTET IO.	CDOE	•	1/10	1/10 8 2	10" 1"	MO OAT HE	.1/10	HD.	NUM	LER	MOTTOM	SWAF	OR.	HG4 M4 18A	CDOS	TYPE AMI			NUMBER
318085	GL	7652	95 03	2497W	555 62	03 08 0	55 196	9	015		0375	04	00	0 x	X 7	x 9			0019
					WAI			· -	IR TEMP.	VIL	ND. DBS.		CIAL						
					COLOR	TRANS OR.	FORCE IM		ILB BU	17 C00	OFFTHS	OBSERV	ATIONS						
						22		33 -1	61 -16	2 4	05								
	w1111HG1	CAST	CARO			1		SPECIFIC	1 IMUZOV	₹ ∆ D	501	UNO T		PO4-P	101AL-P	HO2-H	но,-н	Si Og-	Si .
	TIME HR 1/10	M HO.	TYPE	OEFTN Im)	1 %	1 %.	SIGMA-T	AHOM	414-8107	3 10 ³	. AETO	OCITY	03 mt/l	#8 · 01/1	P0 - 01/1	pg • mi/l	pg - 01/1	PB - 01	
		1				1													
	١	,	STD	0000	-0177	3 3 9 9	2738	000	7113	0000		396	808	· ·		'			
	06:	3	OBS STD	0000 0010	-0177 -0176	33986 3397	2738 2737	200	7201	0007		396 398	808 811	165		017	236	054	799
	06	9	085	0010	-0176	33974	2737	000	7201	0001		398	811	170		018	238	054	799
			STD	0020	-0175	3403	2741	000	6766	0014		401	806	_		•		•	
			STD	0030	-0175	3408	2745		6378	0021		404	801						
	06		STD OBS	0050 10051	-0173 -0173	3418 34184	2753 2753	000	5601	0033		409 410	791 790	192		014	263	058	797
	06	-	085	0346	-0186	34377	2769					455	731	219		003	290	069	
	06		OBS	10372	-0184	34389	2770					461	727	220		004	293	069	
REFERENCE	1				147 SSOEN	CTATION TH	45	1 ,	RIGINATO	rt	01074	MAL		WAYE	T	CLOUO	г		
CTR 10.	CODE	LATTU	1	GITUDE TO	SQUARE	IGMTI	YEAR	COUISE	STATI	ON	OEPTH TD BOTTOM	OEPTH	1	ERVATIONS	THE	CODES			NDDC STATION
C208 NO.	-		1/10			MO OAY HI		NO.	HUM	150		S.War.	S OR	HGT ME SE	COOF	TYM AMI		 -	NUMBER
318085	GL	7652	95 03	2497w	555 62		55 196		015	لہے	0375	04	100	lo Ix I	X7	013	i	- 1	oozol
					COLOR				R TEMP,		NO.	106	CIAL						
							THE MI	Ten i c	net I w		DOF	ORECES.	A BOWE						
					COOF	TRANS OIL	O .	TEO (ba) 0	ULB BU	Et Ican	OFFINS	OBSERV	ARONS						
		.				<u>-, 0 - </u>	toici (ba) 0	001 - 10	LB COD	OFFINS 15	OBSERV	/A TIONS						
	MTSSTNG4	CAST	CARD	OEPTN Im?	COOF	<u>-, 0-</u>	toici (33 -1	61 -10	62 4	DEPTHS	UND		104-1	10141-1	ND3-N	NO3-N	\$1 D4~	si an
	M1151NG4 TIME HB 1/10	M NO 1	C ARD TYPE	OEPTN (m)	DT	SD 22	\$18 7	33 -1	61 -10	LB COD	DEPTHS		O3 mt/I	PO4=F #g + e1/3	101A1-P	ND2=N eg - et/l	NO3=N	St Da-	Si pH
	1 trees	M NO 1	TYPE		7 G	SD 22	S18 7	33 -1	00 00 00 00 00 00 00 00 00 00 00 00 00	ET COO LB COO 52 4 \$ \(\Delta \) 0 0 \(\Delta \) M 2 10 ³	15	UND OCITY				ND3=N ag - et/l		St Da-	Si pH
	HB 1/10	T NO.	STD	0000	COOF DT t % -0178	SD 22 1 ·4.	\$18 7 SIGMA-1	33 -1	61 -10	52 4	15 SDI VEL	UND OCITY 395				ND3=N #g - et/l		St Da-	Si 1/1 эн
	1 trees	T NO.	TYPE		7 G	SD 22	S18 7	33 -1 34CFFC ANOM	00 00 00 00 00 00 00 00 00 00 00 00 00	ET COO LB COO 52 4 \$ \(\Delta \) 0 0 \(\Delta \) M 2 10 ³	15 SDI VELO	UND OCITY				ND2=N #g - et/l		St Da-	Si pH
	HB 1/10	T NO.	STD OBS STD OBS	0000 0000 0010 0010	-0178 -0178 -0178 -0178	3393 3393 3393 3393 3393 3393	2733 2733 2733 2733 2733	33 -1 SMCFFIC ANOM 000	01 -10 1	52 4 \$\(\$\Delta \cdot \text{\$\Delta \c	15 15 SDI VELU	395 395 397 397				ND3=N eg - et/l		St Da-	Si рм
	05 (M NO.	STD OBS STD OBS STD	0000 0000 0010 0010 0020	-0178 -0178 -0178 -0178 -0178 -0181	3393 3393 3393 3393 3393 3393 3400	2733 2733 2733 2733 2733 2733 2733	33 -1 SMCFFIC ANOM 000	01. 80 61 -10 VOLUME ALT-2187	£t coo £b 2 4 ₹ △ 0 0 7 N. M x 10 ³	15 SDI VELU	395 395 397 397 397				ND2=N eg - et/l		St Da-	Si pH
	HB 1/10	M NO.	STD OBS STD OBS STD OBS	0000 0000 0010 0010 0020 0020	-0178 -0178 -0178 -0178 -0178 -0181 -0181	3393 33930 3393 33930 3400 3400	2733 2733 2733 2733 2733 2739 2739	33 -1 SMCFFIC ANOM 000	01 -10 1	52 4 \$\(\$\Delta \cdot \text{\$\Delta \c	15 SDI VELU 14 14 14 14 14 14	395 395 395 397 397 398 398				ND3=N pg - et/l		St Da- sg - et	Si рм
	05 (M NO.	STD OBS STD OBS STD OBS OBS STD	0000 0000 0010 0010 0020	-0178 -0178 -0178 -0178 -0178 -0181	3393 3393 3393 3393 3393 3393 3400	2733 2733 2733 2733 2733 2733 2733	33 -1 SMCCPIC ANOM	01 -10 1	52 4 \$\(\$\Delta \cdot \text{\$\Delta \c	15 SD VELO 14 14 14 14 14	395 395 397 397 397				ND2=N eg - et/l		St D4~ sg - et	Si pM
	05 (M NO.	STD OBS STD OBS STD OBS OBS STD OBS	0000 0000 0010 0010 0020 0020 0025 0030	-0178 -0178 -0178 -0178 -0181 -0181 -0181 -0187 -0178	3393 3393 3393 3393 3393 3400 34000 34071 3410 34100	2733 2733 2733 2733 2733 2739 2739 2739	933 -1 second on one of the one o	7542 7535 6983	52 4 \$ \(\text{\$\Delta} \) 0000 0008 0015	15 15 15 14 14 14 14 14 14	395 395 395 397 398 398 400 402 402				NDg=N eg - eUi		St Da- pg - et	Si эн
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	05 (M NO.	STD OBS STD OBS STD OBS STD OBS STD OBS STD OBS	0000 0000 0010 0010 0020 0020 0025 0030	-0178 -0178 -0178 -0178 -0181 -0180 -0178 -0171 -0171	3393 3393 3393 3393 3393 3400 34000 34071 3410 34100	2733 2733 2733 2733 2733 2739 2739 2739	33 -1 second anom 000 000 000 000 000 000	7542 7535 6216 5338	ET COD LIST COD LIST COD	15 15 14 14 14 14 14 14 14 14	395 395 395 397 398 398 400 402 402 411 411				ND2=N eg - et/l		St Da-es	Si pH
	05 (M NO.	STD OBS STD OBS STD OBS OBS STD OBS STD OBS STD OBS STD OBS	0000 0000 0010 0010 0020 0025 0030 0050 0050 0075	-0178 -0178 -0178 -0178 -0178 -0181 -0180 -0178 -0171 -0182 -0171 -0182	3393 3393 3393 3393 3393 3400 3400 3400	2733 2733 2733 2733 2733 2739 2739 2739	33 -1 3HCCHC AMOM 000 000 000 000 000 000 000 000 000	7542 7535 6216 5338 4888	ET CODE 15 2 4 ₹ △ ○ ▼ 10 ³ 0000 0008 0015 0021 0033 0046	15 VEL 14 14 14 14 14 14 14 14 14 14 14 14 14	395 395 397 397 398 398 400 402 401 411 410 410				ND2=N eg - et/l		St Da- ug - et	Si pH
	05 (M NO.	STD OBS STD OBS OBS OBS OBS STD OBS STD OBS STD OBS STD OBS	0000 0000 0010 0010 0020 0020 0025 0030 0050 0050 0075 0075	-0178 -0178 -0178 -0178 -0181 -0181 -0181 -0180 -0178 -0171 -0171 -0182 -0185	3393 3393 3393 3393 3393 3400 3400 34071 3410 34100 3422 34215 3427 34268	2733 2733 2733 2733 2733 2733 2739 2744 2747 2747 2756 2756 2756 2756 2761 2761	33 -1 3HCCHC AMOM 000 000 000 000 000 000 000 000 000	7542 7535 6216 5338	ET COD LIST COD LIST COD	15 SD VELCE 14 14 14 14 14 14 14 14 14 14 14 14 14	395 395 397 397 398 398 400 402 401 411 410 410 413				ND3=N eg - eVi		St D ₄ w yg • et	Si pH
	05 (M NO.	STD OBS STD OBS OBS OBS STD OBS STD OBS STD OBS STD OBS STD OBS	0000 0000 0010 0010 0020 0020 0025 0030 0050 0050 0075 0075 0100	-0178 -0178 -0178 -0178 -0181 -0180 -0178 -0178 -0178 -0178 -0171 -0182 -0182 -0185	3393 33930 33930 34000 34000 34100 34100 34127 34225 3427 34268 3428 3428	2733 2733 2733 2733 2733 2733 2739 2739	33 -1 SHEETHE AMON OOO OOO OOO OOO OOO OOO	7542 7535 6983 6216 5338 4888	0000 0008 0015 0021 0033 0046	15 SD VELU 14 14 14 14 14 14 14 14 14 14 14 14 14	395 395 397 397 398 400 402 411 411 410 413 413				NDy=N eg - eVi		SID ₄	Si pM
	05 (M NO.	STD OBS STD OBS OBS OBS OBS STD OBS STD OBS STD OBS STD OBS	0000 0000 0010 0010 0020 0020 0025 0030 0050 0050 0075 0075	-0178 -0178 -0178 -0178 -0181 -0181 -0181 -0180 -0178 -0171 -0171 -0182 -0185	3393 3393 3393 3393 3393 3400 3400 34071 3410 34100 3422 34215 3427 34268	2733 2733 2733 2733 2733 2733 2739 2744 2747 2747 2756 2756 2756 2756 2761 2761	33 -1 SHEETHE AMON OOO OOO OOO OOO OOO OOO	7542 7535 6216 5338 4888	ET CODE 15 2 4 ₹ △ ○ ▼ 10 ³ 0000 0008 0015 0021 0033 0046	15 15 15 14 14 14 14 14 14 14 14 14	395 395 397 397 398 398 400 402 401 411 410 410 413				ND2=N #g - et/l		SID ₄	Si, pH
	05 (M NO.	STD OBS	0000 0000 0010 0010 0020 0025 0030 0050 0050 0075 0100 0100 0125 0150	-0178 -0178 -0178 -0178 -0181 -0181 -0180 -0178 -0171 -0182 -0185 -0186 -0186	3393 33930 33930 33930 34000 34000 34070 34100 34215 34215 3427 34268 34278 3428 34278 3429 34293 34393	2733 2733 2733 2733 2733 2733 2733 2739 2739	900 900 900 900 900 900 900 900	7542 7535 6983 6216 5338 4888	0000 0008 0015 0021 0033 0046	15 SOLO VELLE 14 14 14 14 14 14 14 14 14 14 14 14 14	395 397 397 398 398 398 402 402 411 411 410 413 413 417 421				ND3=N #g - et/l		SIDa~	SI PH
	05 (M NO.	STD OBS	0000 0000 0010 0010 0020 0025 0030 0050 0050 0075 0100 0125 0125 0150	-0178 -0178 -0178 -0178 -0178 -0181 -0180 -0178 -0177 -0181 -0182 -0185 -0186 -0186 -0186	3393 3393 3393 3393 3393 3400 3400 3400	2733 2733 2733 2733 2733 2733 2739 2739	900 900 900 900 900 900 900 900	7542 7542 7535 6983 6216 5338 4888 4788	Cool	15 SDI 14 14 14 14 14 14 14 14 14 14 14 14 14	395 395 397 397 398 398 4002 4011 4110 4110 4113 4117 4211 4211				ND3=N eg - et/l		SIDa~	SI, pн
	05 (M NO.	STD OBS OBS	0000 0000 0010 0010 0020 0025 0030 0050 0050 0075 0100 0100 0125 0150	-0178 -0178 -0178 -0178 -0181 -0181 -0181 -0180 -0178 -0171 -0171 -0182 -0185 -0186 -0186 -0186 -0186	3393 3393 3393 3393 3393 3400 3400 34071 3410 3410 3422 34215 3427 3428 3427 3428 3428 3428 3429 3430 3430 3430 3430	2733 2733 2733 2733 2733 2733 2733 2739 2734 2747 2747 2746 2761 2761 2761 2761 2762 2763 2763 2763	000 000 000 000 000 000	7542 7535 6983 6216 5338 4888 4788	Et coo coo coo coo coo coo coo coo coo co	15 SDIO VELLE 14 14 14 14 14 14 14 14 14 14 14 14 14	395 397 397 398 400 402 401 410 410 417 417 421 427				ND3=N eg - et/l		St Da- ug - et	SI, pн
	05 (M NO.	STD OBS	0000 0000 0010 0010 0020 0025 0030 0050 0050 0075 0075 0100 0125 0125 0150 0176	-0178 -0178 -0178 -0178 -0178 -0181 -0180 -0178 -0177 -0181 -0182 -0185 -0186 -0186 -0186	3393 3393 3393 3393 3393 3400 3400 3400	2733 2733 2733 2733 2733 2733 2739 2739	000 000 000 000 000 000	7542 7542 7535 6983 6216 5338 4888 4788	Cool	15 10 VEL 14 14 14 14 14 14 14 14 14 14 14 14 14	395 395 397 397 398 398 4002 4011 4110 4110 4113 4117 4211 4211				ND3=N øg - et/l		St Da- ug - et	Si. pH
	05 (M NO.	STD OBS STD OBS OBS STD OBS	0000 0000 0010 0010 0020 0025 0030 0050 0050 0075 0100 0125 0125 0150 0176 0200 0250	-0178 -0178 -0178 -0178 -0181 -0181 -0181 -0180 -0178 -0171 -0171 -0182 -0185 -0186 -0186 -0186 -0186 -0186 -0186 -0187 -0187	3393 3393 3393 3393 3393 3400 3400 3400	2733 2733 2733 2733 2733 2733 2733 2739 2739	33 - 1 11	7542 7535 6983 6216 5338 4888 4788	Et coo coo coo coo coo coo coo coo coo co	15 source 14 14 14 14 14 14 14 14 14 14 14 14 14	395 397 397 398 4002 401 410 410 417 421 427 430 438				ND2=N eg - et/l		SIDa-wg - est	Si pH
	05 (M NO.	STD OBS	0000 0000 0010 0010 0020 0020 0025 0030 0050 0075 0075 0100 0125 0150 0150 0176 0200 0250	-0178 -0178 -0178 -0178 -0181 -0181 -0180 -0178 -0171 -0182 -0185 -0186 -0186 -0186 -0186 -0186 -0186 -0187 -0187	3393 3393 3393 3393 3393 3400 3400 3400	2733 2733 2733 2733 2733 2733 2733 2739 2747 2747 2747 2756 2761 2761 2761 2761 2762 2762 2763 2763 2765 2765 2766 2766	33 -1 1 14COM 000 000 000 000 000 000 000 000 000 0	7542 7535 6983 6216 5338 4888 4788 4670 4570	00000 00015 0021 0033 0046 0058 0070 0081	15 SDD VELL 14 14 14 14 14 14 14 14 14 14 14 14 14	395 395 397 398 398 398 390 402 401 411 410 413 417 421 427 430 438 438				ND2=N eg - et/l		St Daw ug - et	Si pH
	05 (M NO.	STD OBS STD OBS OBS STD OBS	0000 0000 0010 0010 0020 0025 0030 0050 0050 0075 0100 0125 0125 0150 0176 0200 0250	-0178 -0178 -0178 -0178 -0181 -0181 -0181 -0180 -0178 -0171 -0171 -0182 -0185 -0186 -0186 -0186 -0186 -0186 -0186 -0187 -0187	3393 3393 3393 3393 3393 3400 3400 3400	2733 2733 2733 2733 2733 2733 2733 2739 2739	33 -1 1 14COM 000 000 000 000 000 000 000 000 000 0	7542 7542 7535 6983 6216 5338 4888 4788 4670 4570	Color Colo	15 SDIVELLE 14 14 14 14 14 14 14 14 14 14 14 14 14	395 397 397 398 4002 401 410 410 417 421 427 430 438				ND3=N eg - eVi		SiD ₄	Si, pH

REFERENCE	SHIP	LATITUDE 1/		NGITUDE 1/10	S S	ISDEN QUARE	1	TION T	TIME 4R, 1/10	YEAR	CRUISE NO.		TOR'S ATION UMBER		DEPTH TO BOTTOM	MAX. DEPTH OF S'MPL"		WAVE ERVATIONS	WEA- THER CODE	CODES			NODC STATION NUMBER
318085	GL	744005		1041W	55	$\overline{}$		\neg		1969	-	016		-	0534	05		0 X		6 3	1		0021
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						COLO		DIR.	SPEED	METE	ER OR		W ET BULB	CODE VIS.	OBS. DEPTHS		ATIONS						
						-	+	21	S11	88	_	-	181	8	12								
	· · · · ·	<u></u>				۰.		21	7	00					12					1			_
	MESSENG TIME	NO.	TYPE	DEPTH (m	1)	ĭ °C	2	*/	SIG	MA-T	SPECIFIC	VOLUM	ÿ Šv	Δ 0 N M.	VELO		D 2 m1/1	PO4-P	101AL-F #9 - 01/1	NO2-N ug - al/l	NO3=N yg - of/I	SI 04-5	
	HR 1/10						-		-				x	102				-	py - 0.7.1		pg - 61/1	py - 01,	
		1	c TD	0000		0170	-	00	27		0006	220	.		1,							i	
	0.5	6 0	STD BS	0000		0170		09 089	27 27		0006	339	00	000	144		795 795	167		015	241	066	801
		•	STD	0010		0168		08	27		0006	376	00	006	144	-	793	101		017	241	055	801
	05	6 Q	85	0010	-	0168	34	084	27	45				-	144		793	173		014	243	054	798
			STD	0020		0168		09	27	45	0006	361	. 00	13	144	05	794						
	0.5	5 U	BS STD	0025		0169		085 12	27	/. O	0006	. 0 0 4	0.0	19	144	0.7	795	168		015	243	054	796
			STD	0050		0169		22	27		0005			030	144		787 758						
	0.5	5 0	85	0051		0169		223	27		0003			,,,	144		757	193		012	285	060	792
			STD	0075		0175	34	28	27	61	0004	798	0.0)43	144		743			012	200	000	.,.
			STD	0100		0182		34	27		0004	299	0.0)54	144		728						
	0.5	5 0	BS	10102		0182		348	27		0001	220	0.0		144		727	206		008	293	065	790
	0.3	5 ^	STD BS	0125 0146		0182	34	361	27		0004	· ∠ 3 ()	UL)65	144		734 740	2.1.1		003		0//	700
	0 0		STD	0150		0181	-	36	27		0004	109	0.0	75	144		727	211		002		066	788
	05		85	0152	-	0181		366	27			_ • /			144		722	200		000	296	067	786
	0.3	5 0	BS	0194		0178		368	27						144		722	205		002	294	068	786
			STD	0200		0174		37	27		0004			96	144		720						
	03		STD BS	0250 0292		0140		38 405	27	58	0004	064	01	116	144	61	707	200			266		
	0.5	, ,	STD	0300		0108	34		27	7 1	0003	8863	0.1	136	144	85	695 683	203		000	295	076	786
	0.3	5 0	BS	T0390		0050		540	27		0000	, 000		- 20	145		573	220		001	308	089	780
			STD	0400	-	0019	34		27	79	0003	3143	01	71	149		540			002	- 00	007	100
	0.3	5 0	BS	10494		0014		663	27						145		502	231		002	312	103	779
			510 Bs	0500 10509		0000	34	66 645	27		0002	568	0 4	200	149		516	2.10			2.00		20.
	() 31														145	02	542	229		002	309	099	780
FERENCE	0.3				<u>*</u>	SDEN	,TA	T NOI			OR.	RIGINA	TOR'S		DEPTH	MAX		WAVE	WEA-				NODC
EFERENCE BY ID. DB NO. 318085	SHIP CODE	LATITUGE 1/1	rov	1041W	N VOCE	LI ARE	MO	TION T	IME R.1/10	YEAR	CRUISE NO.	ST.	ATION	8	MOTTO	DEPTH OF S'MPL'S	DIR	WAVE ERVATIONS HGT PER SE	THER	CLOUD CODES 17#E A 44			NODC STATION NUMBER
RY ID. DB NO.	SHIP CODE	LATITUOE 1/1	rov	1/10	Σ '0	1 1 1 5 4 1 WA	MO 03	TION THE	IME R.1/10	YEAR	CRUISE NO.	016 R TEM	ATION	8	10 80110M) 5 3 4 NO.	DEPTH OF S'MPL'S	DIR DO	WAVE ERVATIONS	THER	CLOUD			STATION
ID.	SHIP CODE	LATITUOE 1/1	rov	1/10	Σ '0	1 1°	MO O 3	TION THE	IME R,1/10 3 0 1 VINO SPEED OR	YEAR 1969	CRUISE NO.	O 1 6	ATION	VIS	15 15 15 15 15 15 15 16 16 16 16 16 16 16 16 16 16 16 16 16	DEPTH OF S'MPL'S	DIR DIR	WAVE ERVATIONS HGT PER SE	THER	CLOUD CODES 17#E A 44			STATION NUMBER
ID.	SHIP CODE	LATITUOE 1/1	rov	1/10	Σ '0	SUARE 11' 5 41 WA COLOR	MO O 3	DAY H	IME R.1/10 3.0 VINO SPEED OR FORCE	YEAR 1969 BARC METE	CRUISE NO.	O 1 6	ATION JMBER P. *C WET BULB	VIS	10 80110M)534 NO. 085. DEPTHS	OF S'MPL'S 05 SPEC	DIR DIR	WAVE ERVATIONS HGT PER SE	THER	CLOUD CODES 17#E A 44			STATION NUMBER
ID.	SHIP CODE	LATITUGE 1/1 744005	0 03	1/10	Σ '0	5 41 WA	MO O 3	TION TIGMTH	IME R,1/10 3 0 1 VINO SPEED OR	YEAR 1969 BARC	CRUISE NO.	STANE	ATION IMBER P. C WET BULS 183	VIS.	15 34 NO. 085. DEPTHS	OF S'MPL'S OF SPEC OBSERV	DIR DIR	WAVE ERVATIONS HIGHT PER SE	THER CODE	CLOUD CODES			NUMBER 0022
Y ID.	SHIP CODE GL	1/1 74400 S	rov	1/10	55	SUARE 11' 5 41 WA COLOR	MO O3 TER TRANS	DAY H	IME R.1/10 30 VINO SPEED OR FORCE 511	YEAR 1969 BARC METE	CRUISE NO.	O16 R TEMI	P. C. WET BULS 183	VIS.	10 80110M)534 NO. 085. DEPTHS	DEPTH OF S'MPL'S O5 SPEC OBSERV	DIR DIR	WAVE ERVATIONS HGT PER SE O X	THER CODE	CLOUD CODES	NO ₃ -N	\$104-5	OOZZ
ID.	SHIP CODE GL	1/1 74400 S	0 0 3	1041W	55	SUARE 1. 5 41 WA COLOR CODE OT	MO O3 TER TRANS	DAY H	IME R.1/10 30 VINO SPEED OR FORCE 511	YEAR 1969 BARC METE [mbs	CRUISE NO. A IR O- A IR I BUL 1 - 18	O16 R TEMI	P. C. WET BULS 183	VIS.	15 34 NO. 085. DEPTHS	DEPTH OF S'MPL'S O5 SPEC OBSERV	OBSI DIR OO CIAL ATIONS	WAVE ERVATIONS HIGHT PER SE	THER CODE	CLOUD CODES			OOZZ
Y ID.	SHIP CODE GL	LATITUOE 1/17	O O O O	17/10 10 41 W	55	SUARE 1. 5 41 WA COLOR CODE OT	MO O 3 TER TRANS	DAY H	IME IR.1/10 30 VINO SPEED OR FORCE S11	YEAR 1969 BARC METE Imbs 87	CRUISE NO.	O 16 R TEMI	ATION JAMBER P. C WET BULS 183	VIS. CODE	NO. OBS. DEPTHS	DEPTH OF S'MPL'S O 5 SPEC OBSERV	OBSI DIR OO CIAL ATIONS	WAVE ERVATIONS HGT PER SE O X	THER CODE	CLOUD CODES	NO ₃ -N	\$104-5	OO22
ID.	SHIP CODE GL	LATITUGE 1/17 744005	0 0 3	1041W	55	SUARE 1. 5 41 WA COLOR CODE OT	MO O3 STER STERNS SO S	DAY H	IME R.1/10 30 VINO SPEED OR FORCE 511	YEAR 1969 8ARC METE (mbs 87	CRUISE NO. A IR O- A IR I BUL 1 - 18	O 16 R TEMI	ATION JAMBER P. C WET BULS 183	VIS.	15 34 NO. 085. DEPTHS	DEPTH OF STMPL'S OF SPECOBSERV	OBSI DIR OO CIAL ATIONS	WAVE ERVATIONS HGT PER SE O X	THER CODE	CLOUD CODES	NO ₃ -N	\$104-5	OO22
ID.	SHIP CODE GL MESSENGR TIME HR 1/10	LATITUCE 1/11 74400S	O O O O O O O O O O O O O O O O O O O	DEPTH tml	55	0186 0186 0186	MO 03 STERNS (m) SO S 344 344 344	DAY H OP OF CONTROL O	IME (R.1/10) 30) VINO SPEED OR FORCE S11 SIGN 274 274 274	YEAR 1969	CRUISE NO.	016 R TEMI RY LB	ATION JAMBER P. C WET BULB 183	VIS. CODE	143	OF SPECOSERV	OBSI DIR OO CIAL ATIONS	WAVE ERVATIONS HGT PER SE O X	THER CODE	CLOUD CODES	NO ₃ -N	\$104-5	OO22
Y ID.	SHIP CODE GL MESSENGE TIME HR 1/10	CA.1 CA.1 CA.1 CA.1 CA.1 CA.1 CA.1 CA.1	O3 O3 STD BS BS STO	DEPTH tm1	55	0186 0186 0186 0182 0184	MO 03 STER S TRANS (m) S O S S 344 344 344 344 344 344 344 344 344	DAY H ODAY H ODAY DIR. 100 2 020 021 062	SIGN 274 274 274	YEAR 1969	CRUISE NO.	016 R TEMI RY LB	ATION JAMBER P. C WET BULB 183	VIS. CODE	NO. OBS. DEPTHS 16 SOU VELD 143 143 143	05 SPEC 08SERV 93 96 96	OBSI DIR OO CIAL ATIONS	WAVE ERVATIONS HGT PER SE O X	THER CODE	CLOUD CODES	NO ₃ -N	\$104-5	OO22
ID.	SHIP CODE GL MESSENGR TIME HR 1/10	(A.1) (CA.1) (CA	O3 O3 STD BS BS STO BS	DEPTH (m) 0000 0008 0010 0010	55	O186 0186 0186 0184 0184	MO 03 STER SO S S S S S S S S S S S S S S S S S S	DAY H 09 0 DIR. 21 -4.	SPEED OR FORCE S11 SIGM 274	YEAR 1969 BARC METE (mbs) 87: 41 41 444 444	CRUISE NO.	016 R TEMI RY LB VOLUM LY-X107	ATION JMBER P. *C WET BULS 183 E SULS OO	VIS. CODE 1	NO. OSS. DEPTHS 16 143 143 143 143	05 SPECOBSERV 93 93 96 96	OBSI DIR OO CIAL ATIONS	WAVE ERVATIONS HGT PER SE O X	THER CODE	CLOUD CODES	NO ₃ -N	\$104-5	OO22
ID.	SHIP CODE GL MESSENGE TIME HR 1/10	CA.1 CA.1 CA.1 CA.1 CA.1 CA.1 CA.1 CA.1	O3 O3 STD BS BS STO	DEPTH tm1	55	0186 0186 0186 0182 0184	MO O3 TER S TRANS (m) S S S S S S S S S	DAY H 09 0 DIR. 21 -4.	SIGN 274 274 274	7EAR 1969 8ARETE (mbs 87) 8AA-T +1 44444444444444444444444444444444444	CRUISE NO.	016 R TEMI RY LB VOLUM LY-X107	ATION JMBER P. *C WET BULS 183 E SULS OO	VIS. CODE	NO. OSS. DEPTHS 16 143 143 143 143	05 SPECOBSERV 93 93 96 96 96 98	OBSI DIR OO CIAL ATIONS	WAVE ERVATIONS HGT PER SE O X	THER CODE	CLOUD CODES	NO ₃ -N	\$104-5	OO22
Y ID.	SHIP CODE GL MESSENGE TIME HR 1/10	CA.T C. O.	ON O	DEPTH Lm1 0000 0000 0008 0010 0020	55	O186 0186 0186 0184 0184 0187	MO 03 TER TRANS TRANS SO S 34 34 34 34 34 34 34	DAY H 09 (V DIR. 21 .4.	330 SPEED OR FORCE STILL SIGN	YEAR 1969 8ARC (mbs 87.444444444444444444444444444444444444	CRUISE NO.	016 R TEMI RY LB VOLUM LY-X107	ATION JMBER P. *C WET BULS 183 E SULS OO	VIS. CODE 1	NO. OSS. DEPTHS 16 143 143 143 143	05 SPECOBSERV 93 93 96 96 98 98	OBSI DIR OO CIAL ATIONS	WAVE ERVATIONS HGT PER SE O X	THER CODE	CLOUD CODES	NO ₃ -N	\$104-5	OO22
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FERENCE V ID.	SHIP	LATITUE		NORTH DE NORTH INDICAME	'A/ RSDEN SQUARE	STATION TIM	YEAR	DRIGINATOR CRUISE STATIO NO. NUME	3N DO	EPTH DEPT TO OF TTOM SIMP	H OBSI	WAVE RVATIONS HGT PER SE	WEA- THER CODE	CLOUD CODES		ST	ATION UMBER
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	164		OBS	0020	-0170	3407	2744	0006510	0013	14404	793				205	070	800
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			STD	0500	-0039	3450	2774	0003544	0506	1455	. 546 480	218		014	286	068	780
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TRY ID.	SHIP		JDE 1/10	1/10	555 42 W	MO DAY F	YEAL 18,1/10 145 196 WIND B. SPEED M.	CRUISE STAND. OP 017 ARD- AIR TEMP. ETER DRY	TION MBER "C VIS WET CODE	DEPTH TO DE STA	PTH OF	HGT PER	SEA COL	R CODE	ES NOT		STATION
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TRY ID.	SHIP CODE	741	LUDE 1/10 B7S CARD TYPE	17/10 32 2 8 2 W	SQUARE 10' 1' 555 42 W. COLO CODI DT	IGMT1 MD DAY	YEAR R.1/10 145 196 WIND B SPEC M FORCE M SO4 S	CRUISE STA NU. GO 017 ARO- AIR TEMP ETER DRY mbb) BULB 221 -176 - SPECIFIC VOLUME ANOMALY-AIB?	TION MBER TO VIS WET CODE SULB TO NE TO N	DEPTH DI STA	PTH OF OF PL'S OF	HGT PER	SEA COL	7 0 :	3 N NO3-		STATION NUMBER 0024
TRY ID.	SMIP CODE	741	CARD TYPE	17/10 32 2 8 2 W	555 42 W COLO CODE	MD DAY F	145 196 WIND B. SPEED M. FORCE SO 4 SIGMA-	CRUISE STAND. 9 017 9 1017 1017	TION MBER WET CODE BULB 178 7 DYN M X 10 ³	DEPTH DI STA DE STA DE PTHS DE SOUND VELOCITI 1439	PTH ODER OF THE PROPERTY OF TH	HGT PER	SEA COL	7 0 :	3 N NO3-		STATION NUMBER 0024
TRY ID.	SHIP CODE	741	CARD TYPE ST. OBS	12/10 DEPTH Im 0 0000 0000 0010	SQUARE 10' 1' 555 42 W COLO CODI DT -0181 -0181 -0176	IGMTI MO DAY F 03 09 ATER S R TEANS DIR. SD 27 S */ 3405 34048 3405	145 196 WIND B. SPEED OR M. FORCE SIGMA- 2743 2743 2743	CRUISE STA NU. GO 017 ARO- AIR TEMP ETER DRY mbb) BULB 221 -176 - SPECIFIC VOLUME ANOMALY-AIB?	TION MBER C VIS WET CODE BULB 1 78 7 E D D DYN M X 103	DEPTH DI TO STA O 620 NO. CBS. DEPTHS OB 177 SOUND VELOCIL	PTH O OF PL'S OIR. SPECIAL SERVATION O 2 ml	HGT PER	SEA COL	7 0 :	3 N NO3-		STATION NUMBER 0024
TRY ID.	SMIP CODE	741	CARD TYPE	DEPTH (m) 0 0000 0000 0010	SQUARE 107 17 555 422 W. COLO COOI DT 1 7 C -0181 -0176 -0176 -0176	IGMT1 MO DAY F 03 09 03 09 R TRANS DIR. SD 27 5 %. 3405 3405 3405	YEAR 1/10 196 MIND B SPEED WIND B FORCE WIND WIND	CRUISE STA. NU. Q. Q	TION MBER "C VIS OF THE PROPERTY OF THE PROP	DEFTH DI TO STA DE TO STA	PTH 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	HGT PER	SEA COL	7 0 :	3 N NO3-		STATION NUMBER 0024
TRY ID.	SHIP CODE	741:	CARD TYPE ST. OBS	DEPTH (m) 0 0000 0000 0010	SQUARE 107 1. 555 422	GMT MO DAY F	VEAL 196 (R.1/10) 145 196 (WIND B) STRED ON 6 (WIND C) SIGMA- 2743 2743 2743 2743 2743	CRUISE STAND. 9 017 9 1017 1017	TION MBER WET CODE BULB 178 7 DYN M X 10 ³	DEPTH DI TO SYN 0620 17 17 17 17 17 17 17 1	PTH ODE OF OR OTHER ODE OF OTHER ODE OTHER OTHER ODE OTHER OTHER ODE OTHER OTHER ODE OTHER ODE OTHER OTHER ODE OTHER OTHER OTHER ODE OTHER OTHER OTHER ODE OTHER	HGT PER	SEA COL	7 0 :	3 N NO3-		STATION NUMBER 0024
TRY ID.	SMIP CODE	741:	CAPD 1/10 B7S (CAPD 1YPE ST OBS ST OBS ST OBS	DEPTH Im 0 0000 0 0010 0 0010 0 0020 0 0025	SQUARE 107 17 555 42 W. COLO CODI 1 7 C -0181 -0176 -0176 -0173 -0173 -0173 -0163	GM1 GM7 YEAL 196 WIND 8 NO 196 WIND 500 1 SO 4 S SIGMA- 2743 2743 2744 2746 1 2746 1 2750 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	CRUISE STA. NU. Q. Q	TION MEER VIS	DEPTH DI TO	PTH ODE SPECIAL OR OF MINE SERVATION 2 Miles Servation 2 Miles Servation 2 Miles Servation 3 3 9	HGT PER	SEA COL	7 0 :	3 N NO3-		STATION NUMBER 0024	
TRY ID.	SHIP CODE	741:	CARPO B7S (CARPO B7S (CARPO TIPPE STI OBS STI OBS OBS STI	DEPTH IM 0 0000 0000 0010 0010 0020 0025 0025	SQUARE 107 1. 1. 555 422	GM1 VEAL (18,1/10) 145 196 WIND 8 SPEED MODEL 15 SOUND 15 SOU	CRUISE STA. NU. Q. Q	TION MEER VIS	DEPTH DI TO	PTH 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	HGT PER	SEA COL	7 0 :	3 N NO3-		STATION NUMBER 0024	
TRY ID.	SHIP CODE	741:	CARD TYPE ST. OBS ST OBS ST OBS OBS OBS	DEPTH Im 0 0000 0000 0010 0010 0020 0020 0020 0	SOUARE 107 17 555 42 W. Colo Cobr DT -0181 -0176 -0176 -0173 -0163 -0163 -0163	GM1 GM1 GM2 VEAL (18,1/10) 145 196 WIND 8 SPEED MODEL 15 SOUND 15 SOU	CRUISE STA. NU. Q. Q	TION MEER VIS VI	DEPTH DI TO	97H 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	HGT PER	SEA COL	7 0 :	3 N NO3-		STATION NUMBER 0024	
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TRY ID.	SHIP CODE	741:	CARD 1/10 B7S CARD 1YPE STI OBS	DEPTH Im 0 0000 0000 0000 0010 0010 0020 0020 0	SOUARE 107 17 555 42 W. Colo Cool Otto	GM1 145 196	CRUISE STAND OPEN NU O	TION M8EP VIS V	DEPTH DI TO	97 O 2 mil	HGT PER	SEA COL	7 0 :	3 N NO3-		STATION NUMBER 0024	
TRY ID.	SHIP CODE	741:	STI OBS ST OBS ST OBS ST OBS ST OBS ST OBS	DEPTH Im 0 0000 0 0010 0 0020 0 0020 0 0030 0 0050 0 0050 0 0075	-0181 -0176 -0176 -0176 -0176 -0176 -0173 -0163 -0163 -0163 -0182 -0182 -0188	3405 3405 3405 3405 3405 3405 3405 3405	145 196 MND 8 SIGMA- SIGMA- SIGMA- 2743 2743 2743 2746 2750 2755 2755 2767 2767 72667	CRUISE STA. NU. Q. Q	TION MBER VIS	DEPTH DI TO	PTH 00	HGT PER	SEA COL	7 0 :	3 N NO3-		STATION NUMBER 0024
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	11,		STD	0030	-0171	3411	2747	0006	156	0020		406	792						
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			STO	0150	-0182	3436	2768	0004	144	0073		424	727	100		000	301	067	789
	11	7	oBs	0156	-0182	34359		0001	000	0093		425	726 720	199		000	301	001	707
			STD	0200	-0182	3437 34373	2769 2769	0004	029	0093		434	719	205		000	295	068	789
	11	7	OBS	T0208	-0182 -0180	3438	2769	0003	959	0113		442	718						
			STD	0300	-0178	3438	2770	0003		0133		451	717						
	11	7	085	T0306	-0178	34380						452	717	208		000	294	068	789
		,	STD	0400	-0145	3440	2770	0003	819	0172		+484	673	210		000	293	073	788
	11	7	085	T0405	-0142	34407				0307	_	+486 +546	670 579	210		000	273	013	, 00
			STD	0500	-0051	3452	2776 2777	0003	1325	0207		+551	571	223		000	312	088	779
	11	7	OBS	0510	-0043 0009		2781	0002	999	0239		4591	520			*			
	11	7	STD	0600 0610	0014			0000				4595	515	224		000	315	097	780
	11	'	STD	0700			2783			0268	-	4621	491						
			STD	0800	0054		2785	0002	2712	0296	5 14	4646	464	222		000	321	106	779
	11	7	OBS	0810		34696					1.4	4658	461 468	222		000	322	119	786
	15	0	OBS	T 0858			2785 2785		751	0324		4665	468			000			
			STD	0900 1000			2785		2727	0351		4682	468						
	11	7	085	T1006							1	4683	468	216		000	325	115	779
	15		085	T1059								4689	513			000	322	115	781
		•	STD	1100	0048	3469	2785		2682	0378		4694	505						
			STD				2785		2659	040	-	4708 4716	487 476			000	322	118	780
	11	7	085	T1256					2617	043		4722	502			000	,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,		
	1.6		STD	1300 1312			2786 3 2786		2017	043	_	4724	508			000	322	119	781
	15	0	08S				2786		2562	045	7 1	4736	513						
			STO				2786		2531	048		4750	519				225		700
	15	0	085	1566			2 2786					4759	522			000	325	122	780
			STC	1750	0012		2786		2474	054	-	4788	529			000	322	122	780
	15	0	OBS	1872					27.25	060		4807 4827	533 516			000	222	122	
			STE				2786 5 2786		2425	000	_	4838	515			000	322	122	782
	15 15		085 085	T2068								4854	524			000	322		782
		, U	005	15115	- 000						1		E 2 /	236		000	324	122	781
		0	OBS	2281	-0004	4 3467	8 2781	7				4872	524						701
	15		085 085	2281 T2332				5			1	4878 4882	524	213		000	322	124	

REFERENCE							SDEN		ON TIME				PICIN	ATOR'S			MAX.		WAVE	1	CLOUD	1	1	_	1
CTRY ID.	CODE	LATITU	DE	LONGITUD		sau	ARE	IG	MT)		EAR	CRUISE		TATION	_	DEPTH	DEPTH		ERVATIONS	WEA-	CDDES			NODC	
CODE NO.	COGE	·	1/10	ໍ າ	/10 2	10*	1.	MD DA	AY HR.1	10		ND.	٨	UMBER		BOTTOM	S'MPL"	DIR.	HGT PER SI	CODE	TYPE AMI			NUMBER	
318085	i GL	7329	os l	030241	.w	555		03 1			969		02			3109	31	31	0 2	1 x 2	7 8			0027	
							CDLOR	1	WIN	PEED	BARO	•	RY TEA	AP. °C WET	VIS.	NO.		CIAL							
							COLOR	TRANS.	DIR. I	ORCE	(mbs)		SLB	BULB	CODE	DEPTHS	DBSERV	ATIONS							
									31 5	10	893	-09	50	-058	8	24									
	MESSINGR	CAST	CIR	,		Τ.		T	. 1			SPECIFIC	VOLU	M. 2	vA. D	501	מאט		PO4~P	TOTAL-P	NO2-N	NO3-N	51.04-5		٦,
	TIME HR 1/10	NO.	TYPE	DEP	(m)	'	℃	٥.	<u>۰۰ </u>	SIGMA	_T	ANOM	ALY-XI	,, 0	YN. M x 10 ³	. AET	DCITY	02 ml/l	yg = 01/1	υg • αΙ/Ί	μg = σt/I	μg - ο1/I	μg - α1/		- 18
									-										1					1	+
	1	1	ST	ס ' ס	000	-0	151	340	5 '	274	2 '	000	672	5 0	000	14	410	799	1		' '		1		1
	056	•	085		000		151	340		274							410	799	137		013	219	052	797	
	056		ST OBS)10)10		150 150	340		274: 274:	-	000	678	3 0	007		412 412	804 804	145		012	216		000	
	056	,	ST	_	20		141	340	-	274)	-	000	670	3 0	013		412 418	813	145		013	216	051	800	
	056	5	OBS		25		136	340		274		000		_	• • •		421	815	147		013	218	052	801	
			ST		30	-0	128	340	7	274	3	000	658	3 0	C 2 0	14	426	815							
			ST	-	050		112	341		274	-	000	606	6 0	033		437	805							
	056	•	OBS)50)75		112 154	341 342	_	274	-	000			0,,		437	805	203		010	241	054	800	
			ST ST	-	.00		179	343		276: 276:		000			046 058		424 417	756 726							
	056	,	085		00		179	343		2761		300	410	, 0	ەر ن		417	726	199		025	294	067	790	
			ST		25	-0	179	343		276		000	408	3 0	068	14	422	724			0		•	.,,	
			ST		50		180	343		276		000	405	8 0	078		425	722							
	056)	OBS		.50 200		180	343		2769			200		000		425	722	201		000	298	068	789	
	056		\$T 08S				183 183	343		2769 2769		000	278	9 U	098		432 433	716 716	201		000	293	067	700	
	0,70	,	\$T		250		182	343		2770	-	000	392	3 0	118		441	715	201		000	293	067	790	
			ST		00		181	343		277		000			138		450	714							
	056		085	-	300		181	343		2770							450	714	204		000	300	068	789	
	056	•	085	TO:	199		164	344		277		000	271		1 7/		475	686	201		000	298	070	789	
	056	,	ST OBS				163 109	344		277: 277:		000	211	9 0	176		475 518	685 622	207		000	304	078	788	
	0,70	,	ST		00		108	344		277		000	340	0 0	211		519	621	201		000	304	010	100	
			ST		00		017	345		277		000			245		579	545							
			ST		00		043	346		2779		000	319	2 0	277		624	492							
	056)	OBS				070	346		278			205	2 -	3 0 0		653	463	204		000	307	104	782	
			ST ST	_	300 200	-	070 063	346		2784 2784		000			308 336		653 667	463 458							
	087	,	085	το:			062	346		2784		000	200	, 0	220		670	457	222		000	320	110	782	
			ST		000	-	060	347		278		000	275	0 0	364		683	461			000	220	110	102	
	056)	OBS	10	000	0	060	346	96	278	5					14	683	461	230		000	319	111	780	
	0.05	,	ST		.00		053	346		278		000	273	9 0	391		696	466						_	
	087	,	OBS ST		200		052 045	346		278! 278!		000	260	6 0	418		698 709	466 469	221		000	321	116	781	
	056	•	085				042	346		278		000	_00		- 10		717	470	230		000	321	117	781	
			ST	D 13	00		039	346		278		000	267	7 0	445		724	467	220		300	22.	111	, 01	
	087	,	OBS	-	10	-	038	346	-	278							725	466	221		000	321	118	781	
			ST ST	_	00		033	346		278		000			472		738	473							
	087	,	ST OBS		10		027 026	346		2789 2789		000	2 6 U	2 0	498		752 753	480 481	223		000	323	121	783	
	007		ST		50		025	346		278		000	259	9 0	563		794	496	263		000	رےر	121	103	
	087	,	085	16	311		022	346		2786		,					803	499	224		000	320	122	786	,
			ST		000		005	346		2786		000	247	2 0	626		827	506							
	087 087		085	T 2 0			004	346		2786							829	507	227		000	321	123	782	
	087		OBS ST	T 22	00		001 008	346	-	2786 2786	-	000	225	2 ^	7,,7		862	519	226		000	321	120	783	
	087	,	085		24		009	346		2 1 8 6 2 7 8 6		000	د د ع	<i>5</i> 0	747		907 911	527 528	224		000	321	119	788	
	087		OBS		37			346		2786						- •	. • •	523	219		001	313	118	789	
			\$T		00		009	346		2786		000	233	8 0	864		994	537							
	087		OBS	T30			017	346		2786						15	000	538	222		000	319	121	788	
	087		obs	130	193	-0	023	346	50	2786	60							538							

ERENCE			T		7	250	IEN	TAT	ION TI	MF T		ORIGIN	ATOR'S		GEFTH	MAX	i.	WAVE	WEA-	CLOUD			NODC
10.	CODE	LATITUDE	LOF	NGITUOE E	#1	SQUA	ı	I	GMTI	١	EAR C	RUISE	TATIO		TO NOTTOR	OF		WAVE ERVATIONS	THER	CDOES		5	TATION
E NO.		1/10	-	1/10		0,	1,	MOIL	H YAC	R.1/10		NO.	AUWBE	1	001106	" S'MPL	'S DIA.	HGT PER SE	CODE	TYPL AM	1		UMBER
18085	GL	724755	103	0283W	5	55]					969	02	3		3658	3 3 5	00	0 x l	X8	7 8			0028
						L	WAT		_	IND	BARO-	AIR TE		- vis.	ND,	5.0	ECIAL						
						C	OLOR	TRANS,	DIR	SPEED OR FORCE	METER	DRY	WET	CODE	OBS. DEPTHS	OBSER	VATIONS						
						F					-		-	_		+							
					_			Ļ	05	S13	846	-036	-04		27	1	1						
	MESSENGA TIME		'RD	DEPTH Imi		1	•c	١,	٠4.	SIGM	,	PECIFIC VOLU	ME	E A D	so	GNU	O 2 ml/l	PO4-P	TOTAL-P	NO2-N	NO3-N	\$104-51	рН
	HR 1/10	T NO. I	Y P E									ANDMALY-E		X 10 ³	VEL	OCITY		µg = 01/1	PB = 01/1	μg - αt/l	yg - al/l	אן al/l - פע	, ,,,
'		, ,	STD	0000	٠.	-01	61	338	8.8	272	9 '	000796	6 1	0000	14	402	829	,					
	003			0000		-01		338		272				,		402	829	113		013	200	050	79
	00			0008		-01	64	338	379	272	9				14	402	828	121		013	196	050	80
		5	STD	0010		-01		338		272		000796		8000		405	828						
			STD	0020		-01		338		272		000792	7 (0016		415	825						
	00:			0021		-01		338		272						+416	825	127		013	202	050	80
			510	0030		-01		339		273		000723	4 (023		430	809						
	001			0042		-01		34:		274		000593		0037		+441 +434	788 773	167		013	247	057	79
			STD STD	0050 0075		-01 -01		34:		275 276		000583		0049		419	738						
	00:			0075		-01 -01		34		276		000445	י כ	1049		416	729	213		022	282	067	78
	00.		510	0100		-01 -01		343		276		000410	3 1	0060		418	722	213		022	202	007	10
			STD	0125		-01		34		276		000402		070		422	715						
	00:			0125		-01		34		276						422	715	201		021	296	069	78
			STD	0150		-01		34:	38	277		000398	8 (080	14	425	715						
	00:	3 06	35	T0167		-01	81	34	384	277	0				14	428	715	201		004	299	070	78
			STD	0200		-01	79	34		277	0	000388	4 (100	14	434	704						
	00:	3 08	35	0244		-01		344		277						+443	686	214		002	301	074	78
			STD.	0250		-01		344		277		000373		119		444	686						
			TD	0300		-01		344		277		000359	1 (137		463	667	2 - 5					
	00:			T0323		-01		344		277		000335	_	. 1		477	648	205		002	300	079	78
	003		STD	0400 0405		-00 -00		345		277 277		000325	9 (172		548 551	538 532	214		001	297	095	78
	00.		STD	0500		00		346		278		000302	8 (203		587	495	214		001	291	095	10
			STD	0600			63	346		278		000284		232		617	469						
	003			10663		00		346		278		000201		, - , -		632	458	220		001	297	111	77
			STD	0700			69	34		278		000279	3 (261		636	457			00-			
		5	OT D	0800		00	62	347	70	278	5	000275		288	14	650	455						
	00	3 06	35	T0843		00		346		278	5				14	656	454	220		000	299	116	77
	0 3			T0880			59	34		278						662	461	214		000	310	115	77
			STD	0900			55	34		278		000266		315		664	463						
	• • •		STD	1000		00		34		278		000258	1 (1342		675	469	224					
	00:			T1079			42	346		278				. 7 . 0		688	472	226		000	318	117	77
	0.21		STD	1100 T1120			43 44	34		278		000261	1 (368		692 696	473	215		000	214	124	7 7
	0 3		55 5TD	1200			39	346		278 278		000261	2 4	394		+696 +707	473 476	210		000	316	120	77
			STD	1300			33	346		278		000251		1420		721	481						
	035			1360			29	346		278		550250	٠ '			729	484	215		000	313	127	77
			STD	1400		00		346		278		000253	7 ()445		735	488						
		5	STD	1500		00	21	346	59	278		000248		471	14	749	496						
	0.35	0.6	35	1650		00		346		278	7					772	503	216		000	314	124	77
			OTE	1750		00		346	_	278		000246	4 (532		787	504						
	035			1864		00		346		278						805	505	217		000	312	124	77
			STD	2000		00		346		278		000238	0 ()593		826	512	21.			215	100	-, ~
	03			2040 T2334		00 00-		346		278 278						832	514 526	216 216		000	315 316	122 124	77 77
	0 3		55 5TD	2500		-00 -00		346		278		000224	4	709		906	532	210		000	310	124	11
	035			T 2636		-00 -00		346		278		000224	→ (,,,,,,		928	535	215		000	315	125	77
	035			2834		-00		346		278						961	538	216		000	311	121	77
	,,,		STD	3000		-00		346		278		000215	9 1	819		990	541			550			
	039			3036		-00		346		278			Ì			996	542	213		000	314	122	77
	039			3238		-00	23	346	643	278					15	029	548	215		000	315	123	77
	035			3441		-00		346		278	7					065	555	214		000	314	122	77
	035			T3475		-00		346		278						071	553	213		001	311	123	77
	039	5 06	35	T 3500		-00	23	346	665	278	7				15	076	546	211		000	314	121	780

REFERENCE	SHIP	LATITUDE	100	NGITUDE	± 5 ′.	SDEN	TATI	ON TIM	E	YEAR		_	ATOR'S		QEP1H TO	MAX. DEPTH	0.00	WAVE	WEA-	CLOUG	ì		NODC
CTRY IO.	CODE	1/1		1/10	10.		MO 0		1/10	ICAK	CRUISE NO.		TATION NUMBER]	BOTTOM	OF S'MPL"		HGT PER SE	THER CODE	TYPE AM		S	TATION
318085	GL	713615	03	0361W	55	5 10	03 1	6 0	25 1	969		02	4		3848	35	00	o x	×1	7 7			002
						WA	-	WI	SPEED	BARO			MP. °C	vis.	NO. 085.	SPE	CIAL					,	-
						COLOR	TRANS.	DIR.	FORCE	METE!		JLB	BULB	CODI	OBS. DEPTHS	OBSERV	ATIONS						
								09 5	504	87	7 -0	33	-045	8	24								
	MESSENGR	CAST	180	OEPTH (m	,	τ 'c	5	.,	SIGM	4-1	SPECIFIC		ME S	A D	sou	JNO	O2 ml/l	PO4-P	TOTAL-P	NO2-N	NO3-N	\$104-\$1	
	TIME 6	NO.	YPE	Der III w	"				3IG M		ANOM	ALY—X1	67	x 10 ³	. AETO	CIIA	U2 m1/1	μg + α1/1	νg - α1/1	ug - a1/l	µg - al/	μg - σt/l	
			STD	0000		0185	340		274		000	652	7 0	000		394	820						
	014		BS STD	0000		0185 0185	340 340		274		000			007		394	820	144		800	234	066	79
	014		35	0010		0185	340		274		000	500	5 U	007		395 395	831 831	147		009	235	266	9.0
			STD	0020		0186	340		274		000	555	8 0	013		397	829	141		009	233	065	80
	014		35	0026		0186	340		274	-						397	828	155		009	236	065	800
			STD STD	0030		0185 0177	341 344		274		000			019		400	800						
	014		85	0051		0177	344		277		000	3 9 0	2 0	029		410 411	693 689	199		009	285	077	70
	, - 4		STD	0075	-	0178	344		277		000	373	1 0	039		414	687	177		007	200	077	78
			STD	0100		0180	344		277		000	363	6 0	048		418	685						
	014		35	0102		0180	344	-	277		0.00					418	685	208		002	292	078	78
			STD STD	0125		0170 0154	344 344		277		000			057 066		427 439	668						
	014		35	0152		0152	344	-	277	-	000	,,,	1 0	000		439 440	648 646	210		000	000	081	78
			STD	0200		0103	345		277		000	331	1 0	083		472	598	210		000	000	001	10
	014		3s	10204		0099	345		277						14	474	594	215		000	300	088	78
			STD	0250		0034	345		278		000			099		513	540						
	014		STD BS	0300 T0306		0019 0024	346 346		278	_	000	291	7 0	114		546	498	210					
	014		57D	0400		0066	346		278		000	280.	e n	143		550 585	494 464	218		000	304	099	78
	014	08		T0410		0068	346		278			-00	• •	- 70		588	462	218		000	313	106	77
			STD	0500		0071	347	-	278		000	275	6 0	170	14	604	458			000		-00	
	014	08		T0514		0071	346		278							606	457	218		000	312	111	78
			STD STD	0600 0700		0065 0058	347 347	-	278		000			198 225		618	458						
			STD	0800		0051	347	-	278		000			252		631 645	459 460						
	014	08	35	T0812		050	346	97	278				- •	- / -		647	460	225		002	310	118	78
			STD	0900		0044	346		278		000			278		659	467						
	014	08	5T0	1000		0038	346		278		000	261	5 0	305		673	474						_
	014		STD	1020 1100		0037 0033	346 346		278 278		000	250	2 0	331		676 687	475 478	233		002	317	120	78
			STD	1200		0027	346		278		000			356 356	14		482						
	038	08		1204		0027	346		278	6			•	- 3		702	482	219		000	312	121	77
	014	OB		T1280		0025	346		278							714	484	229		000	315	123	78
			STD STD	1300 1400		0024 0018	346 346		278		000			382		717	486						
	038	08		T1441		0018	346		278		000	48	, 0	+07	14	731 737	495 498	220		000	2 2 2	120	7.0
	0		STD	1500		0014	346		278		000	246	6 0	432		131 746	503	220		000	322	120	78
	015	08	-	T1546		0012	346		278				_ •	-		753	506	229		003	310	125	77
	038	08	_	1746		0007	346		278							778	508	220		000	321	120	78
	038	0.5	TD.	1750 1946		0007	346		278		0002	294	4 0	491		779	508	2.16					_
	038		STD	2000		0005	346		278 278		0002	340	a 0	550		813 822	519 524	223		000	318	121	78
	038	08		2247		0012	346		278		000		, 0	<i>-</i>) (362	536	218		000	318	119	78
	038	08		2449		0017	346	67	278							395	535	224		000	311	120	78
	030		TD.	2500		0018	346		278		0004	222	1 0	564		903	538						-
	038 038	90 90		T2651 2954		0021 0022	346	_	278 278							928	544	217		000	314	121	78
	220		TD	3000		0023	346		278		000	2110	o 0	773	149	980 988	550 550	219		000	316	120	78
	038	08		T3175		0025	346		278		500.			. , ,		17	550	215		000	311	120	78.
	038	08	3.5	T3464		0027	346	ь7	278	7					150		554	217		000	311	120	782

RENCE ID. NO.	SHIP	LATITUDE	LON	GITUDE ADDITION	sou			ON TIME	YE.	AR C	RUIS NO.		TATIO	N	DEPT TO ROTTE	DEFI	OBS	WAVE ERVATIONS	WEA THER CODI	CODES		2	NOGC TATION TUMBER	
NO.	\vdash	1/10	-	1/10 =	10*		WO L	AY HR.1		\rightarrow	NO.	+				3.4172	1	HGT PER SE	-	TIPE AM	1	_		
8085	GL	703885	03	3323W	555			7 05		69	_	AIR TEA			429		100	0 X	X7	X 9	1	ı	0030	
						COLOR	TRANS		SPEED	BARO- METER	-	DRY	WET	VIS.	085	Dacen.	CIAL VATIONS							
						CODE	(m)	DIR.	OPCE	(mbs)		BULB	BULE		DEPT	HS Desex	V ~ 110 M 3							
								17 S	06	878	-()56	-06	7 4	21									
	MESSENGE	CAST C	NRD.		T					Π,		ic vorn		ξ Δ D	Т.	SOUND		PO4-P	TOTAL-F	NO2-N	NO ₃ -N	\$1.04-5	T	Ts
	TIME	Of NO TO	YPE	DEPTH (m)	1	*C	١ ،	٠/٠٠	SIGMA.	-1	AND	MALY-EI	,,,	X 103		FLDCITY	02 ml/l	vg - 01/1	μg - α(/)	ug - 01/1	yg - st/l	PO - 01/	pH	C
	HR 1/10				+		┼—	+		-+-	_		+		+			+						Н
	l		STD	0000	-0	183	340	١ ١	2739	, '	000)699	2	0000	່ າ	4394	812		I			1	I	11
	068			0000		183	340		2739		000	,0,,	_	0000		4394	812	148		009	257	066	800	
	000		STD	0010		183	339		2738		000	703	2	0007		4395	813			• • • • • • • • • • • • • • • • • • • •		•	- 00	
	068			0010		183	339	994	2738						1	4395	813	160		010	252	066	799	
		5	STD.	0020	-0	184	339		2738		000	702	2	0014		4396	813							
	068		-	0027		185	339		2738							4397	813	157		009	258	066	799	
			STD.	0030	-	184	34(2743			0658		0021	_	4399	796							
	0		OTO	0050	_	177	34:		2769		000	0413	3	0032		4410	704 694	195		005	287	074	790	
	068		55 5TD	0053 0075		176	344	-	2771		000	373	3	0041		4415	686	170		005	201	076	190	
		_	STD	0100	_	180	344		2774			3363		0051		4418	676							
	068			0106		180	344		2774			,,,,				4419	674	203		004	290	078	790	
			STD	0125		174	344		2774	•	000	0362	1	0060	1	4425	667							
		9	STD	0150	-0	167	344	+3	2773	3	000	362	1	0069	1	4432	657							
	068	3 06	35	0159	-0	164		+33	2773	}						4435	654	194		000	296	079	789	
		-	STD	0200	_	078	345		2778		000	326	4	0086		4483	580							
	068			0212		057	349		2778					•100		4495	562	214		000	321	090	784	
			STD	0250	_	8000	34!		2780			0306		0102		4525	522							
	0.4		OTO	0300 10317		038	346	559	2782		00	0288	1	0117		14555 14564	484 475	223		000	311	101	780	
	068		5 T D	0400	-	070	340		2784		00	0279	8	0145		14587	461	225		000	711	101		
	068			0421	_	072		592	2784			0,	_			4591	459	219		000	314	107	781	
	• • • • • • • • • • • • • • • • • • • •		STD	0500		069	34		2784		00	0275	9	0173	. 1	14603	460							
	06			T0531	0	1068	34	598	2784	٠					1	4608	460	223		000	322	112	780	
		5	STD	0600	0	1064	34	70	2785	5	00	0272	8	0200	1 1	4617	461							
		5	OT 6	0700		1057	34		2785			0270		0227		14631	461							
			STD	0800	_	051	34		2785		00	0268	1	0254		14645	462				221		301	
	06		-	T 08 35	_	049		592	2785				,	- 201		4650	462	227		000	326	117	781	
			STD STD	0900 1000		1045 1038	34		2785			0266 0261		0281		14659 14673	465 470							
	06		35	T1042	-	0036	-	584	2785		00	0201	,	0 2 0 1		14679	472	228		000	327	119	781	
	001		STD	1100		033	34	-	2785		00	0265	4	0334		4687	473			000	J = .		.01	
			STD	1200		0028	34		2785			0261		0360) :	14702	476							
		5	STD	1300	C	0023	34	68	2786	5	00	0257	5	0386	, :	14716	480							
	04	5 06	88	T1321		0022	_	679	2786	-						14719	481	227		000	319	116	781	
			STD	1400		0018	34		2786			0255		0412		14731	487							
			STD		1500		34		2786		00	0253	3	0437		14746	494	- > -						
	04		BS	T1561		0011		674	2786				-	~ (14755	498	227		000	324	117	781	
	0.6		STD	1750		0003	34	67 665	2786		00	0246	2	0500		14784	503 508	224		000	311	123	780	
	04		BS STO	1877 2000		0002	34		2786		00	0240	3	0560		14822	515	224		000	211	123	7 0 0	
	04		8 S	2080		0007		662	2786		00	J_70	-	J > 00		14834	519	228		000	314	124	779	
	04		85	2284	_	0013	_	671	278							14868	526	221		000	314	123	779	
			STD	2500		0017	34		278		00	0221	0	0676		14903	530							
	0 4		BS	2589		019		668	278	7						14918	533	225		000	313	121	782	
	04	5 01	BS	T2778		0022		661	2786							14949	541	225		000	313	123	780	
			STD	3000		0025	34		278		00	0213	7	0784		14987	553	2.2-			3.00	100	770	
	04		85	3097		0026		661	278							15003	555	227		004	309 311	122	779 781	
	04	5 U	BS	T3402	- (0028	24	659	278	f						15056	552	224		000	211	120	101	

CE SHIP	LATITU	٦.	LDNGITUOE	1, 2	SDEN		ION TIA		EAR		ORIGIN			DEPTH	MAX		WAVE	25.	WEA-	CLDUC			NODC
D. CODE	LATITO	1/10	1/10	10*	11.		AY HR		CAK	CRUISE NO.		TATION IUMBER	ì	BOTTOM	OF S'MPL		HGT PER		COOL		_		TATION
85 GL	6836	a s	032036W	519					969		021			4483	11	-	0 X		x 2	7 8			000
051 02	0000	05 1	0 3 2 0 3 0 1	1217	WA			NO	BARC		AIR TEN		Т	NO.			10 12 1		* 2	1.0	,	,	0031
					COLDR	TRANS.	DIR.	SPEED OR FORCE	METE {mbs	R	DRY BULB		CODE	200	OBSCO	CIAL VATIDNS							
							10	506	84		123	-039	7	13									
MESSENG TIME HR 1/1	CAST NO.	Γ ^ R (7	*c	s	٠/	SIGMA	-t		C VOLU	7 0	∆ D M . MY X 10 ³		DOUTY	02 ml/l	PO4-		#AL=P g = o1/I	NO2-N ug - at/l	NO3-N µg - 01/I	SI O.4=Si µg - at/l	рН
71 171				+-		1								+-				+					-
l	1	ST	0000	-0	165	338	37	272	8 '	000	804	1 0	000	14	400	801	1	ı		l	ı		1
06	2	085	0000	-0	165	338	169	272	8					14400		801	159			014	253	072	79
06	2	085	0008	-0	165	338	362	272	7					14	402	804	170			013	256	071	79
		ST	D 0010	-0	165	338	6	272	7	000	810	3 0	800	14	402	805							
		ST	D 0020	-0	165	338	16	272	7	000	809	7 0	016	14	404	807							
06	2	OBS	0022	-0	165	338	357	272	7					14	404	808	153			014	252	071	798
		ST	0030	-0	164	338	37	272	7	000	804	7 0	024	14	406	808						-	
06	2	085		-0	162	338	883	272	9					14	409	795	170			009	250	072	796
		ST	D 0050	-0	162	339	9	273	7	000	708	8 0	039	14	412	771					-	-	
		ST	D 0075	-0	161	34	32	276	4	000	454	5 0	054	14	421	682							
06	2	OBS	0087	-0	161	344	28	277	3					14	425	647	215			006	295	083	79
		ST	0100	-0	162	344	6	2776	6	000	1345	7 0	064	14	427	616							
		ST	D 0125	-0	163	349	1	2780	0	000	305	7 0	072	14	431	567							
06	2	085	0129	0129 -0		34520		2780						14	432	560	223			000	302	091	785
		ST	D 0150	-0	079	3456		2781		000	296	9 0	080	14	475	528							
06	2	085	T0171	-0	009	345	93	2780	0					14	512	509	227			000	313	100	782
		ST	0 0200	0	014	346	3	278	2	000	291	9 0	094	14	527	525						• •	-
		ST	D 0250	0	046	346	8	278	5	000	267	8 0	108	14	551	552							
06	2	OBS	0256			346	90									555	233			000	311	110	780
		ST	D 0300	0	066	347	0	278	5	000	268	2 0	122	14	568	484							- '
06	2	OBS	T0339	0	074	347	03	278	4					14	579	446	227			000	320	112	779
		ST		0	070	347	0	278		000	271	5 0	149	14	587	445							
06	2	085		0	068	347	00	2789	5					14	590	444	230			000	316	115	78
		ST	D 0500	0	063	347	0	278	5	000	2686	5 0	176	14	600	445							
		ST	D 0600	0	057	347	0	2789	5	000	265	5 0	202	14	614	447							
06	2	085	0682	0	052	346	93	2789	5					14	626	448	234			000	322	120	778
		ST	D 0700	0	051	346	9	2789	5	000	269	5 0	229	14	628	449				_			
		ST	0800	0	046	346	9	278	5	000	2666	5 0	256	14	643	453							
06	2	085	T0852	0	043	346	89	2789	5					14	650	456	231			000	318	124	782
		ST	0 0900	0	040	346	9	2789	5	000	264	1 0	282		657	458						'	
		ST	0 1000	0	034	346	9	2786	5		2606	-	309		671	464							
06	2	OBS	T1072	Ó	030	346	86	2786			,	- •			681	468	234			000	327	125	78

NCE	SHIP	LATITU	0.6	LONGITU	DE JOSEFF	1/ 2 SOU	SOEN		ION TIN		AR		ORIGIN			DEPTH	M A)		WAVE	ามเ	WEA-	CLOUD			NODC	
ID. NO.	CODE	·	1/10		1/10	10*			AY HR.		~	CRUISE NO.		MOITAT		BOTTON	A S'MPL		HGT PE		CODE	TYPE AM			TATION UMBER	
085	GL	6450	65	04124	7W	520	41	03 2	20 1	+5 19	69		02	7		4572	22	26	0 5		Х9	6 5			0032	
				_			WA	TER	WI	NO	BARG		AIR TEA		VIS	NO.	T	ECIAL						,	000.	
	SHIP COOE						COLOR	TRANS.	OIR.	Ok I	METE (mbe		DRY ULB	WET	0000	OBS.	0.000	VATIONS								
							CODE	1/	2.	FORCE		-	-		+	_	+									
						-		ļ	26	505	92	5 -0	09	-012	8	14			_	-						
ŀ	MESSENGR		CARE			7	℃	5	٠ ا	SIGMA	_T	SPECIFIC	OMALT-1107		E A D		UND	02 ml/	PO4		014 L-P	NO2-N	NO3-N	SI O4-SI		
	HR 1/10		TYPE									ANUM	~		x 10 ³	VEL	OCITY		µg	11/1	ا/۱۵ - وبر	ug - 01/1	⊌g - al/l	/10 - gu		
		1	!																	Ì	_	- 1				
,			์ sт	ס ' מ	000	-0	021	339	3	2727	7	000	809	1 (0000	14	468	774	•							
	138	8	085	(0000	-0	021	339	727	2727	7				•		468	774	14	0		007	197	075	79	
			ST	0 (010	-0	024	339	92	2727		0008121		1 (8000	14	14469									
	138	8	Q8S 0010			024			2727							4469 77		14	2		005	192	075	79		
			ST		020		072	34(2741			678	-	016		450	734								
			ST		030		111	347		2752		_	571		0022		435	702								
			ST	-	050		167	34:		2768		000	419	0 (032		415	658								
	13	8	OBS		050		167	341		2768							415	658	21	1		009	277	085	77	
			ST		075		171	34		2769		000	405	8 (0042		417	663								
	150	6	085		096		174		28	2773			_				420	667	19	0		007	296	086	77	
			ST		100		165	344		2774		000	360	8 (052		425	645		_						
	138	В	085		100		165	344	-	2774							425	645	21	2		800	289	086	7 7	
			ST		125		108	344		2774		_	362		0061		456	600								
	3.5	,	ST		150		064	344		2775		000	356	8 (070		481	562	2.0	,			212	1.0		
	156	ь			197	-0022 -0021				2781			200				510	504	20	6		003	313	103	76	
	12		STD 0200					3460 278			000	293	5 (0086		511	501	2.2	-			225		٠.		
	138	8	085				021			2781 2785		0002643			100		511	501	22	כ		007	325	104	76	
	16			STD 0250 OBS 0298		_	_	3457 34692		2785		0002043) (100		563	465 430	22			001	331	118	7.4	
	150	0		STD 0300			0055 0055		3469))	000	267	, ,	113		4563 50		22	4		001	331	110	76	
	131	٥	OBS 0300		0	0099		3469 34692		,	0002671		1 (1113	1 -	,,0,,	-	24	2		005	327	115	76		
	10	0		STD 0400		0	0052		34692 3470			0002600		0 (0139		501 4579 465		27	2		000	251	117	10	
	154	6	085		1499		048	34	-	2786		000	200	•	, , , ,		593	442	23	0		001	331	124	76	
	(_	51		500		048	34		2786		000	257	4 (165		594	442		•		501	J	164	. 0	
			ST		600		043	34		2786			258		191		608	437								
			ST		700		038	346		2786			259		217		622	432								
	156	6	085		701		038	346		2786					'		622	432	21	6		019	333	124	76	
			ST		008		033	346		2786		000	257	6 (243		637	433							-	
			ST		900	0	028	346	59	2786	5		254		269	14	651	433								
			51		000		023	346		2786			252		294		666	434								
			ST	D 1	100	0	018	346	8	2786	5	000	250	4 (319	14	680	434								
			ST	D 1	200	0	013	346	8	2786	5	000	247	8 (344	14	695	435								
	156	6	085	T 1	205		013	346	82	2786	5						696	435	21	7		001	322	126	77	
			ST	D 1	1300		009	346	9	2787	7	000	241		368		710	454								
			ST		400	_	006	346		2787			236		1392		726	471								
			ST		500		002	346		2786		000	230	7 (416		741	486								
	156	6	OBS		712	-0	005	346	98	2789	7					1 4	774	509	22	5		000	320	124	77	
			ST	-	1750	-0	006	34	70	2788		000	218	5 (472		780	510								
			ST		000		014	346		2788		000	217	2 ()526		819	515								
	156	5	085	Tá	2222	-0	020	346	75	2787	7					14	854	519	22	9		006	320	125	77	





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